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No. 13

Cominco to Erect \$5 Million Urea Plant in Calgary

TRAIL, B.C.—The immediate construction of a \$5,000,000 urea plant at Calgary, Alberta has been announced by the Consolidated Mining and Smelting Company of Canada Ltd. The new facilities will be operated in conjunction with the company's large ammonia and chemical fertilizer plants in that city, and will have an annual capacity in excess of 36,000 tons.

For fertilizer use, urea will be available as prilled or pelleted product analyzing 45% nitrogen. It will also be combined with other materials to make the various solid and liquid fertilizer products.

The new fertilizers will be an addition to the company's Elephant Brand line, sold throughout Canada and distributed in the U.S. by Cominco Products, Inc., of Spokane, through Balfour, Guthrie and Co. Ltd. The storage and distribution facilities of Cominco Products, Inc. at Spokane and elsewhere in the U.S. will be enlarged to handle the increased production.

In addition to the various fertilizer products, urea will be produced in forms suitable for animal feed supplements and industrial uses. The plant, which will be the first of its kind in Western Canada, will be in full production by mid-1960.

Agrico Purchases Site in Minnesota

NEW YORK—The American Agricultural Chemicals Co., manufacturer of Agrico fertilizers, has announced the purchase of a 64-acre site at Sleepy Eye, Minn.

B. R. Richey, vice president of the firm, indicated that a fertilizer plant would be constructed on the site "at a future date." Further details about the proposed plant are not presently available.

Boost in Fertilizer, Pesticide Consumption Forecast on Basis Of Fat Cotton and Corn Acreage

By JOHN CIPPERLY

CropLife Washington Correspondent

WASHINGTON — There will be generous frosting on the sales cake of the fertilizer industry this year when the tonnage volume of sales in the Cotton and old Corn Belt are toted up.

This observation is more than fully confirmed by trade sources here who are forecasting for the Cotton Belt an increase of between 8 and 15% in fertilizer tonnage, varying by states.

For the Corn Belt, fertilizer sales

Congressman Asks Big Increase in Funds For Interior Department Pesticide Study

WASHINGTON — If Congressman Lee Metcalf has his way, pesticide research funds will be increased over nine times the amount Congress granted last year under the Magnuson Bill. The conservation-minded Montana legislator has introduced a bill (HR 5813) which would increase Department of the Interior's appropriations for pesticide research from \$280,000 to \$2,565,000 per year.

Pointing out that the \$2½ million plus appropriation would be less than 1% of the wholesale value of chemical pesticides produced domestically in 1956, Rep. Metcalf said, "This is the sum that actually is needed to enable the secretary of the interior to study various aspects of the pesti-

cides problem . . . to assure that the future use of chemical controls shall not inflict irreparable damage on the nation's fish and game resources and farm animals."

A spokesman for the Fish and Wildlife Service stated that Rep. Metcalf's proposal "in not an unreasonable request." He said that of 220 pesticides in use today, only 21 have been fully tested for toxicity to fish and game. Fish and Wildlife Service cooperating with the Department of Agriculture currently is handling pesticides research programs.

The Montana congressman based his nine-fold increase on a detailed 23-point program. Receiving the largest slice of research funds would

be investigations into long-range pesticidal programs on fish: \$200,000. Next largest share would go towards studying effects of fire ant formulations on wildlife and farm animals: \$175,000.

Receiving lesser amounts would be studies into chemical effects on reproduction, growth, vitality, bird migration, contamination of water areas, and other facets of life and populations of domestic animals, wildlife, and fish.

"It is imperative that this essential research is started without further delay," asserted Rep. Metcalf. "These research projects would give us the kind of information that is so desperately needed. As it stands, there is no assurance that we are not poisoning all living creatures to the point of sterility."

The legislator's office reports that little opposition is expected to the proposed increase "except from those who don't want to spend money for anything." Sen. Magnuson—who sponsored last year's bill—will throw his support behind HR 5813, it is reported.

The proposed \$2,565,000 annual appropriation would include last year's sum, not be in addition to it.

USDA Official Denies Stopping Spray Program Because of Public Sentiment

MEMPHIS — A newspaper report stating the local spray program to control the white-fringed beetle "had been stopped because public sentiment was against it" was labeled untrue last week by N. H. Causey of the Plant Pest Control Division, U.S. Department of Agriculture.

An article carrying the byline of Paul Fairleigh in the Memphis Press-Scimitar of March 18 stated Mr. Causey had informed the newspaper that all spraying operations in Memphis had been suspended. The story reported that "Causey said the local spray program had been stopped because public sentiment was against the spraying and because his home office in Jackson, Miss., had not allotted them insecticide (dieldrin) to continue the spraying."

When questioned regarding the accuracy of the story, Mr. Causey said the spray program had been halted temporarily because of delay in getting the insecticide. He labeled as false the statement that the program

had been stopped because of public protest.

"Mr. Fairleigh called and asked me specifically if the program had been halted because of public sentiment, and I told him that was not the reason," Mr. Causey said.

The story by Mr. Fairleigh also stated:

"Ordered not to spray property where owners objected, Mr. Causey said they met such stiff opposition it was useless to try and continue the spray program in Memphis. However, he said the spraying might be resumed next fall and winter if the program became more acceptable to the public."

ICA Issues Fertilizer Authorizations Totaling \$1.8 Million to Vietnam

WASHINGTON—International Cooperation Administration has issued fertilizer authorizations totaling \$1.8 million to Vietnam. Included are authorizations of \$1 million for nitrogenous fertilizer, \$600,000 for phosphates and other fertilizer materials and \$200,000 for potash fertilizers. The contracting period for all ends next July 31 and terminal delivery date is Sept. 30.

Vietnam also was issued a \$50,000 pesticide authorization, with a contract period ending July 31 and a Sept. 30 delivery date. ICA also announced a \$100,000 potash authorization to Korea. The contracting period ends July 31, and terminal delivery date is Sept. 30.

Sulfur Production

WASHINGTON—The domestic sulfur industry produced 346,475 long tons of native sulfur and 52,284 tons of recovered sulfur (of a purity of 97% or greater) during January, according to reports of producers to the U.S. Bureau of Mines.

TVA Makes First Ammoniated Super Acid Shipment

KNOXVILLE—Tennessee Valley Authority reports it has made its first shipment of a new liquid fertilizer, ammoniated superphosphoric acid. Two tank cars, each carrying 50 tons, are enroute to the Pacific Cooperative at West Stayton and Klamath Falls, Ore. The new fertilizer analyzes 11-33-0.

Some of the ammoniated superphosphoric acid will be used as a straight material on field demonstrations in Oregon. These field demonstrations will be established in cooperation with county agents and other state agricultural personnel. In addition to being used as a straight material it can also be mixed with other ingredients to make high-analysis complete liquid fertilizers. TVA said it plans to produce 3,000 tons this year for use in research and educational programs.

Fire Causes Serious Damage to Chemical Firm

ST. JOSEPH, MO.—Damage estimated at more than \$500,000 was sustained by the Woodbury Chemical Co. here, when fire destroyed a four-story office and warehouse occupied by the firm.

The estimate of damage was made by C. D. Woodbury, brother of Herbert A. Woodbury, president, who said the building was heavily stocked with chemical sprays.

(Turn to ACREAGE, page 8)

Minnesota Adopts New Amendment to Fertilizer Law

ST. PAUL, MINN.—The Minnesota legislature on March 18 passed an amendment to its fertilizer law paving the way for eventual conversion of plant food guarantees from the oxide to the elemental basis. The new amendment becomes effective on July 1, 1959.

According to R. E. Bergman, director of feed and fertilizer control, Minnesota Department of Agriculture, Dairy & Food, the new provisions state that elemental guarantees will be required only after a public hearing indicates that the change-over would not impose an economic hardship on the fertilizer industry by conflicting labeling requirements among the states. The effective date of such regulation, if it were adopted after the public hearing, would be six months afterwards. Then there would be an additional period of two years wherein both the oxide and elemental guarantees could be stated, although the elemental form would actually constitute the grade of the product.

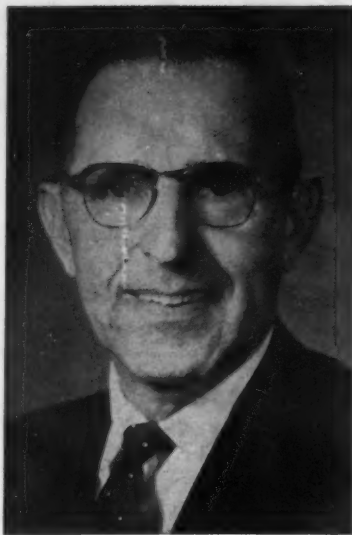
The law presently in effect in Minnesota has no provisions regarding guarantees in both the oxide and elemental form, but the oxide guarantee now constitutes the grade. Consequently it has been permissible for both the oxide and elemental guarantees to be stated on the label and some manufacturers in the state have already indicated the elemental percentage of plant nutrients following the oxide percentage guarantee. (Cropplife, Nov. 10, 1958.)

Light Bollworm Count Expected for Texas Area

CORPUS CHRISTI, TEXAS—Pink bollworm infestations in the Coastal Bend area are expected to be relatively light this summer, according to recent field checks.

Hugh Cavitt, supervisor of the U.S. Department of Agriculture's plant pest control division, says inspectors are finding very little debris in the fields, and the bollworm count is small.

The clean-up work done by farmers last autumn and the unusually wet winter helped reduce the amount of field debris, thus eradicating a harboring place for the insects, he said.



Homer A. Smith

ASSISTANT MANAGER—The appointment of Homer A. Smith as assistant manager, chemical distributor operations, has been announced by O. E. Hempel, manager of chemical distributor operations for the Minerals & Chemicals Corporation of America, Menlo Park, N.J. In his new position, Mr. Smith will assist Mr. Hempel in directing the operations of 30 distributors in the U.S., Canada and Mexico. He has been associated with the company since 1949 and prior to his new appointment was a distributor field representative.

Wyoming Officials Revise Spray Contracts

CHEYENNE, WYO.—State and federal officials have met to revise Wyoming's bid invitations and contracts for aerial spraying against grasshoppers.

W. L. Chapman, state agricultural commissioner, estimates 460,000 acres of Wyoming rangeland will be sufficiently infested with the hoppers this year to require control.

Heaviest infestations, based on last fall's egg surveys, are in Johnson, Sheridan, Niobrara, Goshen, Platte and Campbell counties, Mr. Chapman said.

He estimated the cost per acre for aerial spraying will be 20¢ this year. The actual cost last year was 17¢. The cost is shared equally by the state, federal government and landowner.

Fertilizer Use in Idaho Jumps 36%

MOSCOW, IDAHO—Fertilizer consumption in Idaho in 1958 amounted to 122,938 tons, or an increase of about 36% over the 90,452 tons used in 1957, reported the State of Idaho Department of Agriculture.

About 39,482 tons of plant nutrients were used in 1958, as compared to 29,305 tons in 1957. This shows an increase of 35%. Most of this increase was due to more use of nitrogen and phosphorus.

Dry chemical fertilizers furnished approximately 82%, and liquid chemical fertilizers about 18% of the total plant nutrients used.

Greatest use of liquid fertilizer was as a nitrogen carrier. Nearly 30% of the total nitrogen used was furnished by liquid carriers. This is about the same as shown in 1957.

Although the percent increase in potash used in 1958 over 1957 was quite high, the total tonnage remains quite small.

Approximately 7,319 tons of gypsum were used in 1958. This is about the same as 1957.

Liquid soil conditioners amounted to 398 tons in 1958. In 1950, about 549 tons were used.

Leading carriers of total nitrogen in descending order were: ammonium nitrate, ammonium sulphate, ammonium phosphates, anhydrous ammonia, aqua ammonia mixes and urea.

Leading carriers of total P₂O₅ in descending order were: triple superphosphates, ammonium phosphates, liquid P₂O₅, mixes and single superphosphate.

Leading carrier of K₂O was muriate of potash. Some tonnage sold in mixes.

Using average nutrient cost of nitrogen, P₂O₅, and K₂O at 15, 9.5, and 6.5¢ per pound respectively, farmers invested approximately \$10,000,000 in commercial fertilizer for the 1958 year. This includes about \$109,785 for gypsum, and \$25,000 for miscellaneous soil conditioners.

Joins Hooker

NIAGARA FALLS, N.Y. — Jules Gilbert, formerly of West Hempstead, N.Y., has joined the general development department of Hooker Chemical Corp. at Niagara Falls, N.Y., as a market research analyst in the field of phosphorus and its derivatives. The announcement was made by Dr. Marion B. Geiger, director of general development.

Revised Handbook On Insecticide Use Issued by USDA

WASHINGTON—The 1959 revision of Agriculture Handbook 120—Insecticide Recommendations of the Entomology Research Division for the Control of Insects Attacking Crops and Livestock—has been issued, the U.S. Department of Agriculture announces. This handbook summarizes the department's recommendations as of Jan. 1, 1959.

Included are a number of insecticides that represent marked advancement in pest control, USDA said. These insecticides are either more effective in the control of insects and mites, less toxic to workers applying them, or leave less persistent residues and reduce the waiting period between last application and harvest.

Among the changes in recommendations for the current season are: Sevin is recommended for the first time for control of the boll weevil, pink bollworm, bollworm, cotton leafworm, cotton fleahopper, stink bugs, lygus and other mirids, thrips, and the cotton leaf perforator, and ethion, Kelthane, and Trithion for spider mite control on cotton.

Endrin is recommended for European corn borer control on corn and for the sugarcane borer on sugarcane. It is also recommended for control of spittlebugs on corn, alfalfa and clover on a no-residue basis with the precaution not to treat after the crop is 2 inches high.

As a result of extensive tests in Oklahoma during 1958, die/drin has been recommended for control of flea beetles on seedling sorghum. Methyl parathion has been added to the list of materials recommended for the control of green bugs on small grains.

Malathion is now recommended for the Japanese beetle on blueberry, blackberry, raspberry and beans; for asparagus beetle on asparagus and for pickleworm on squash and cucumber.

Kelthane has been added to control mites on most deciduous fruits and on berries and vegetables, and Trithion for mite control on beans, tomatoes, potatoes, strawberries and as a prebloom spray on apple trees.

Diazinon is now recommended for aphids on strawberries, hops, beans, beets, celery, cucumber, lettuce, pepper, spinach, tomato and certain cole crops, and Phosdrin for the red-banded leaf roller on apple and for aphids on melons.

Use of Bayer 21/199, commercially available as Co-ral which was previously recommended in a supplement to AH 120 for the 1958 season for control of certain livestock pests, is incorporated in the revision, together with proper precautions for use on beef cattle, sheep, goats and swine.

Edward J. Geise Named Commodity Sales Head For Naugatuck Chemical

NEW YORK—Edward J. Geise has been appointed manager of commodity sales for the Naugatuck Chemical division, U.S. Rubber Co., announced Harold M. Parsekian, general sales manager.

Mr. Geise, formerly assistant manager of commodity sales, replaces Albert W. Holmberg, who retired in February. Mr. Holmberg had completed 50 years of service in the rubber industry just prior to his retirement.

In his new post Mr. Geise will direct a group of commodity sales managers who supervise sales, promotion, advertising and forward planning for all of the division's 300 products. He will make his headquarters at the division's main plant in Naugatuck, Conn.

Mr. Geise joined Naugatuck Chemical in 1953. He has a degree in chemical engineering from Rensselaer Polytechnic Institute.



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TWO-WAY RADIO

MASON CITY, IOWA—Legreid Farm Service Co. at Emery, Iowa, has recently installed a tower for two-way radio contact between truck and office, enabling the farmer to get fast service on fertilizer needs. The company uses its facilities for supplying liquid or dry plowdowns. The company also sends soil samples to the fertilizer laboratories for analysis of soil needs. An ammonia transport truck is used for weighing the fertilizer and transporting it direct to the farmer.

Gibberellic Tests On Texas Cotton Show Big Increases

LUBBOCK, TEXAS—One of the largest field tests in the Southwest on the use of gibberellic acid was conducted near Muleshoe last year. The Wood Chemical Co. of Lubbock in cooperation with Merck & Co., Inc., maker of the acid, applied the materials on a 26-acre irrigated cotton field.

The results showed an increase of a half bale of cotton an acre where six grams were used. The plot treated with two grams an acre showed almost as much increase in yield. A third plot with only a one gram treatment proved less effective.

"We were well satisfied with the tests," said Donald Johnson, chemist for Wood Chemical. "The acid was put on in two applications—the first one just before cotton started developing squares, and the second one about five weeks later."

Mr. Johnson says the results were noticeable all through the growing season. The treated cotton was greener and put on more bolls than adjoining fields.

This year the firm is conducting more extensive tests with the Merck company. Most of the plots will be confined to the irrigated cotton areas of West Texas. One onion producer plans to use the acid for seed treatment.

"We will be using a granular form this year for the first time," Mr. Johnson explained. "It is supposed to give a slower release to the plants and last longer. Last year's tests were conducted by spraying the diluted acid on the foliage. This gives an immediate response."

This year the firms will use the acid as side-dressing with the seed. Each plot will be carefully selected and closely supervised.

Other tests in 1958 were conducted in the Rio Grande Valley of South Texas, according to Mr. Johnson. He says it was used effectively when mixed with seed sterilants, a combination which helped control seedling diseases and gave the small plants a boost in growth.

Bill to Cut Potash Tax Dies in New Mexico

SANTA FE, N.M.—A bill to reduce the state severance tax on potash was killed in committee during the closing days of the New Mexico Legislature. Thus, the tax continues to be 2½% of the market value of the potash ore at the time it leaves the ground.

The bill would have reduced the value of the ore to three-quarters of market value for the purpose of taxation. It was designed to give some tax relief to the mines in the Carlsbad area which are facing increasing competition from Canadian and overseas imports. It would have also brought the potash tax rate closer to New Mexico's severance taxes on other minerals: under present laws, the severance tax on oil, gas and potash is 2½%; ½% on copper and uranium; and ¼% of 1% on other minerals.

NPFI Announces Start Of Michigan Testing

WASHINGTON—The timetable for launching the intensified soil testing program in Ionia County, Mich., was announced by the National Plant Food Institute and the Michigan Agricultural Extension Service. It is designed to encourage more efficient crop production by farmers, through the use of lime and fertilizer.

Supervising and correlating the program will be Fred Peabody, county extension director of Ionia County, and John R. Guttay, NPFI district representative, with headquarters at East Lansing, Mich.

A kickoff dinner is scheduled for May 28, at Ionia, county seat of Ionia County, to get the program officially underway. In attendance will be farmers, county business men, editors and agricultural workers.

At this dinner, the new Michigan crop production potential wall charts

and checklists will be presented for the first time. In addition, posters, publicity kits, and other information materials will be distributed.

This will be followed by a fertilizer industry meeting on June 2, at which dealers and salesmen serving Ionia County farmers will be informed of the program's importance to them and how they can cooperate in it.

During early June the program will be presented to interested groups, including service clubs, bankers, home demonstration personnel, 4-H Clubs, FFA chapters, Vo-Ag classes and soil conservation specialists.

Special meetings will be held throughout the county during June to provide instruction in collecting soil samples, soil testing and analysis. Arrangements will be made for establishing depots for collecting soil samples.

The program aims at reaching 100% of Ionia County's farmers in 1959 and the years immediately following to boost gross agricultural in-

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come by \$4 million and net income by \$2 million.

The project is part of the program recommended by the NPFI's Midwest research and educational committee, headed by R. P. Thomas, International Minerals and Chemical Corp. A soil testing task force has advised on plans for the program, under the chairmanship of Leo Orth, Sinclair Petrochemicals.

Australians to Build Superphosphate Plant

COCKLE CREEK, AUSTRALIA—The Consolidated Zinc Corp., Ltd., will build an \$18 million lead and zinc smelter here.

The expected yearly output would be about 38,000 tons of both lead and zinc.

The plans call for inclusion of a big sulphuric acid plant for the production of superphosphate.



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Texas Firm Opens New Liquid Plant

BROWNFIELD, TEXAS—A liquid fertilizer manufacturing plant has been opened by the Goodpasture Grain & Milling Co. The plant which cost more than \$200,000 has a capacity of 18 to 20 tons of fertilizer per hour.

The business will operate 24 hours a day if necessary, said Harvey W. Bolles, sales manager of the fertilizer division. Fertilizers to be manufactured are phosphoric acid, Uran and 100% straight potash.

Primarily the plant will make liquid fertilizer for wholesale distribution. Other products to be handled are anhydrous ammonia, fertilizer solutions, liquid phosphorus, liquid potash and dry fertilizers.

Grady Goodpasture, president of

the firm, says liquid fertilizers are especially adapted to this area because they can be used in open ditch or sprinkler irrigation systems, chiseled into the soil or sprayed on growing plants.

A three-tank battery at the plant will enable the firm to blend 8-24-0, 32-0-0, 5-11-11, 10-15-0, 10-15-5 and 15-15-0. By using an index plate, the ingredients can be blended through a central loading pump to the producer's specifications.

A 100-gallon transport tank can be filled and on its way to the field in a few minutes, according to Mr. Bolles, who says this is the only plant of its kind on the South Plains.

The company plans to sell or loan these tanks to farmers. Each one is equipped with a re-circulating pump and gasoline motor to keep the fertilizer properly mixed. The tanks can also be used to mix insecticides.

Already retail batteries similar to the plant set-up at Brownfield have been erected by dealers in Denver

City, Seagraves, Welch, Plains, Ropesville and Shallowater.

Each of the three tanks has a capacity of 5,000 gallons, and can be replenished by transport trucks operating from the home plant at Brownfield.

In addition to the fertilizer plant, the Goodpasture Soils Laboratory, which has been in operation about two years, will be enlarged and located in the same building.

Most of the fertilizer will be used on irrigated cotton, although within the last two years there has been a steady trend in applying fertilizer to grain sorghums.

SALES IN OKLAHOMA

STILLWATER, OKLA.—Fertilizer sales in Oklahoma during February, 1959, amounted to 7,990 tons, according to state figures recently released. Most popular grade was 10-20-10, with 1,826 tons. The most used material was normal superphosphate, with 1,168 tons.

\$8.5 Million Nitrogen Fertilizer Plant to be Built in Yugoslavia

NEW YORK—A contract was signed in Belgrade recently between the Italian companies, Montecatini and Ansaldo, and the Yugoslav "Rudnap" Co. for the construction of an \$8.5 million nitrogen fertilizer plant at Lukavaz in Bosnia. Construction is slated to begin immediately.

The plant will produce 100 metric tons per day of anhydrous ammonia starting from coke oven gases supplied by an already existing coke oven plant. In addition, 340 metric tons per day of nitric acid and 380 metric tons per day of nitrochalk containing 20.5% nitrogen will be produced.

Fausser-Montecatini processes will be used. Equipment and machinery for these new plants will be supplied by Societa Ansaldo of Genoa.

Texas Fertilizer Sales Top '57 Half-Year Mark

COLLEGE STATION, TEXAS—The total tonnage of fertilizer sold during the last half of 1958 in Texas was 4.2% over the same period in 1957. J. F. Fudge, state chemist, also revealed in his bi-annual report on distribution of sales of fertilizer that the trend toward the use of higher analysis fertilizers continued at a rapid pace.

The average composition of mixed goods was higher than ever before with the average for the state near the 9-18-9 level. The average nitrogen in materials was significantly higher—over three times above the 1953 average. On the other hand, Mr. Fudge pointed out, the percentage of available phosphoric acid continued to decrease. Sales of 10-20-10 were 30% higher than in 1957 and accounted for 71% of the total for 1-2-1 ratio and 55% of all mixed fertilizers sold.

Sales of materials were up 3.6% from a year ago due almost entirely to the great increase in anhydrous ammonia, especially in west Texas, said Mr. Fudge.

Sales in east Texas accounted for 48% of the total tonnage of mixed goods and 56% of the goods with a 1-2-1 ratio. West Texas bought 91% of the anhydrous ammonia, 74% of the nitrogen solutions and 32% of the ammonium sulfate. The Gulf Coast area used 40% of the ammonium sulfate and 30% of the 16-20-0. Large differences in the fertilizer use pattern in the various regions of the state are apparent, said Mr. Fudge.

To further emphasize the influence of anhydrous ammonia, Mr. Fudge pointed out that nitrogen in materials averaged 38.1% last fall compared with 19.39% in 1953. Total nutrients in all fertilizers increased from 28.69% to 43.38% during the same period.

1958 Super Output Down 2% from 1957

WASHINGTON—Production of superphosphate and other phosphatic fertilizers during 1958 totaled 2,414,883 short tons, down 2% from 1957 output, the Bureau of the Census has reported. Shipments in 1958 amounted to 1,808,852 short tons, off 1% from 1957. Production last year included 1,292,297 short tons of normal and enriched, 829,089 short tons of concentrated and 293,497 short tons of other phosphatic fertilizers.

SALES IN KENTUCKY

LEXINGTON, KY.—December, 1958 fertilizer sales in Kentucky amounted to 17,439 tons or 4,723 tons more than December, 1957, reported the Department of Feed & Fertilizer, Kentucky Agricultural Experiment Station here. Of this total, 14,164 tons were mixed fertilizers and 3,275 tons were of straight materials.

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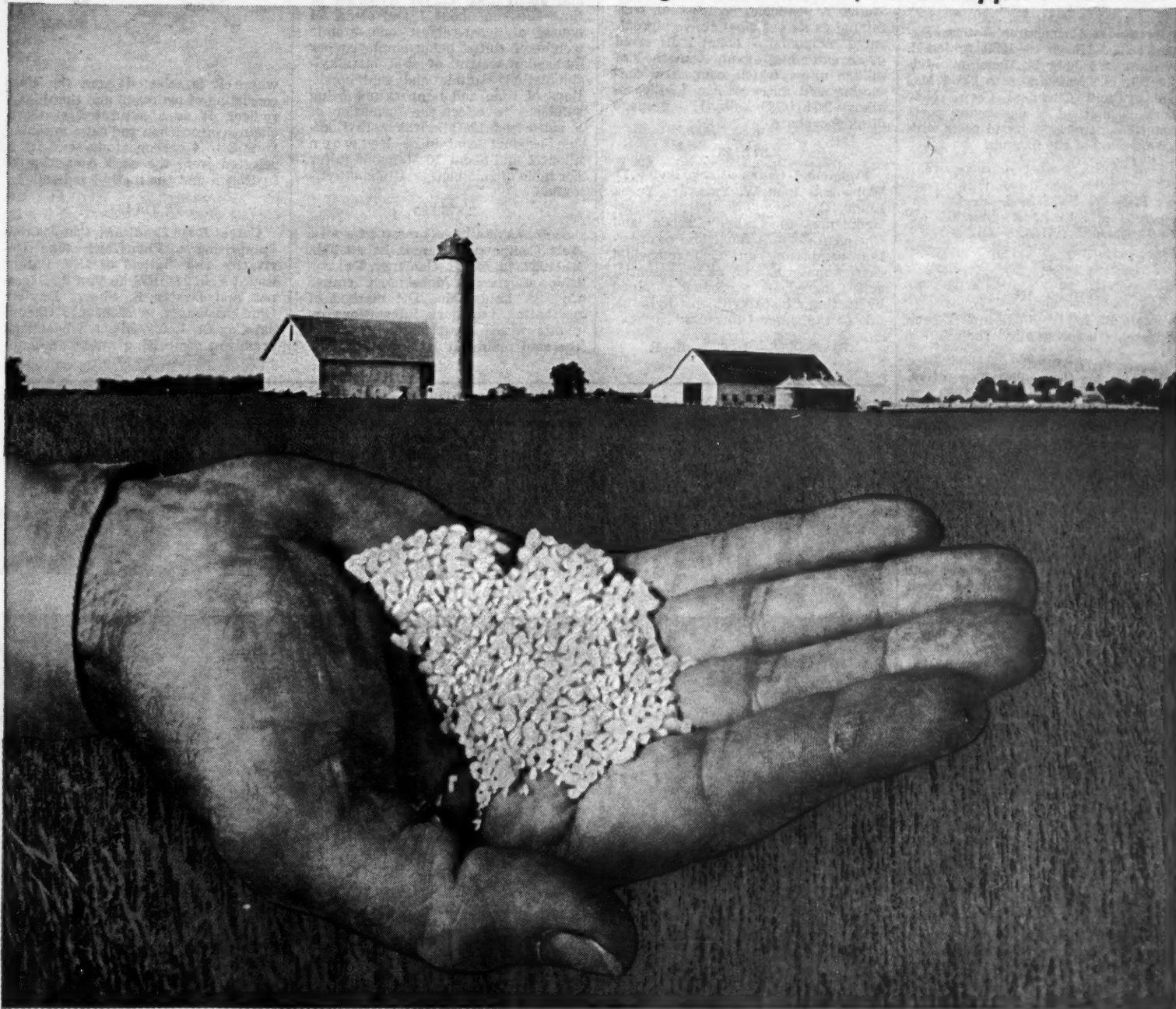
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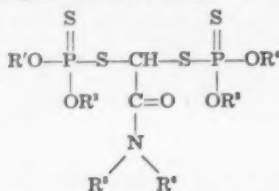


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Pesticidal Phosphorus Esters. Patent issued March 10, 1959, to Joe R. Willard and John F. Henahan, Middleport, N.Y., assignors to Food Machinery and Chemical Corp., New York. A method of destroying pests comprising contacting said pests with a compound of the formula



wherein R', R¹, R², R³, R⁴ and R⁵ each represents a lower alkyl radical.

2,876,088

Process for Controlling Vegetation. Patent issued March 3, 1959, to Gideon D. Hill and Silas S. Sharp, Wilmington, and Dale E. Wolf, Hockessin, Del., assignors to E. I. du Pont de Nemours and Co., Wilmington. A process for the control of vegetation in soil having an adsorptivity equivalent to a *k*-value above about 15 which comprises applying to said soil at an acre rate of from about 5 to 100 lb. of a herbicidally active aromatic aliphatic urea mixed with from about 25 to 250 gal. of a hydrocarbon oil boiling in the range of 400 to 700° F. at atmospheric pressure and having a sulfonation index of no more than about 90% by volume.

2,876,089

Herbicidal Composition. Patent issued March 3, 1959, to William H. Brugmann, Jr., Milltown, Arnold J. Morway, Clark, and Jeffrey H. Bartlett, Westfield, N.J., assignors to Esso Research and Engineering Co. A grease composition having herbicidal characteristics which comprises a liquid base comprising a herbicidal liquid ester of a halogenated aryloxy carboxylic acid and an aliphatic primary alcohol having at least 7 carbon atoms, said liquid base being thickened by having finely dispersed therein a grease-forming soap selected from the group consisting of lithium, aluminum, barium and calcium soaps of C₁₀ to C₂₀ fatty acids.

2,876,090

Promotion of Flowering on Pineapple Plants. Patent issued March 3, 1959, to Robert W. Leeper, Honolulu, Hawaii, and Victor C. Fusco, New Kensington, Pa., assignors to Olin Mathieson Chemical Corp. In the promotion of the flowering of vegetative pineapple plants, the step of applying beta-hydroxyethyl-N-beta-hydroxyethyl-carbazinate.

2,876,155

Fungicidal Compositions. Patent issued March 3, 1959, to Frank L. Howard and Barbara C. Cormier, South Kingstown, R.I., assignors by mesne assignments to Mallinckrodt Chemical Works, St. Louis, Mo. A fungicidal composition comprising approximately 5 parts by weight of a compound selected from the group consisting of potassium chromate, sodium chromate and ammonium chromate, approximately 5 to 20 parts by weight of a compound selected from the group consisting of cadmium sebacate, cadmium succinate, cadmium phthalate, cadmium maleate and cadmium rubeanate and approximately 0.5 to 4 parts by weight of Victoria green.

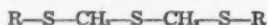
2,876,156

Insecticides—Derivatives of Itaconic Acid. Patent issued March 3, 1959, to Abraham Bavley, Brooklyn, Karl J. Brunings, Malba, and Donald P. Cameron, Bronx, N.Y., assignors to Chas. Pfizer & Co., Inc., New York. A 1,2-dicarboxy-3-[S-(O,O-dialkyl)]-propane dithiophosphate wherein the alkyl and alkoxy groups contain from one to four carbon

atoms. A pesticidal composition containing as its principal active ingredient a compound of claim 1 dispersed in an extending agent. A method of killing mites which comprises contacting said mites with a 1,2-dicarboxy-3-[S-(O,O-dialkyl)]-propane dithiophosphate.

2,877,153

Fungicidal Compositions. Irving D. Webb and John W. Yale, Jr., Yorba Linda, Cal., assignors, by mesne assignments, to Collier Carbon and Chemical Corp. A fungicidal composition comprising an inert fungicidal carrier material and, as the essential active ingredient, a product obtained by heating a bis(alkylthiomethyl) sulfide of the general formula:

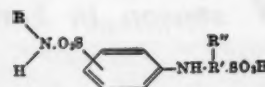


wherein R represents an alkyl group containing from 1 to 3, inclusive, carbon atoms, with elemental sulfur at a temperature between about 100° C. and about 250° C. for a period of time between about 1 and about 24 hours, at least about one atomic weight of sulfur being employed per molecular weight of said bis(alkylthiomethyl) sulfide and said conditions of time and temperature being sufficient to effect the formation of a sulfurized bis(alkylthiomethyl)sulfide product containing between about 1 and about 10 atoms of sulfur per mole of said bis(alkylthiomethyl)sulfide.

2,875,125

Sulfamoylanilinoalkanesulfonic Acid Compounds. Patent issued Feb. 24, 1959, to Van R. Gaertner, Dayton, Ohio, assignor to Monsanto Chemical Co., St. Louis, Mo. The method of combating fungus infestations on plants which comprises applying to the said plants at least about 1/2 lb.

per acre of a compound of the formula



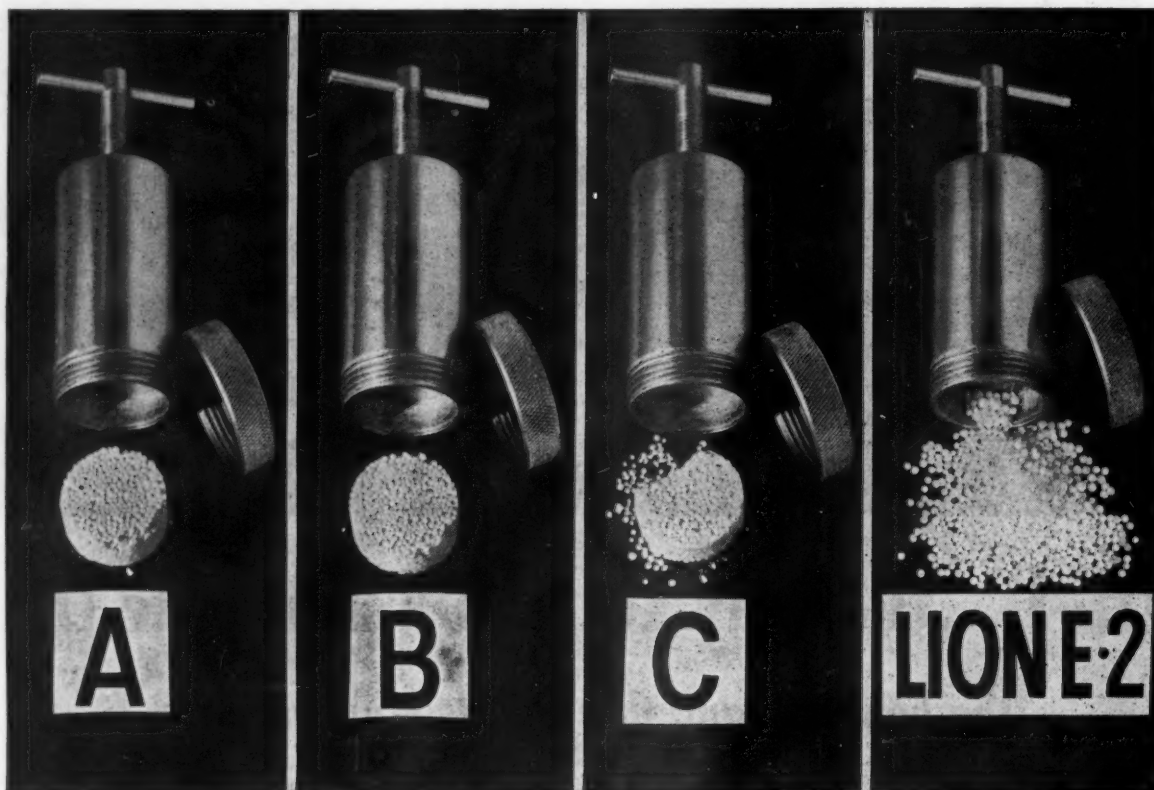
where R is selected from the class consisting of hydrogen and the thiazyl radical, R' is a saturated straight-chain hydrocarbon radical containing from 3 to 4 carbon atoms, and R'' is selected from the class consisting of hydrogen and the methyl radical.

2,875,124

Cereal Rust Eradicator Comprising a Phenylhydrazone Derivative and Method of Use. Patent issued Feb. 24, 1959, to Van R. Gaertner and Dexter B. Sharp, Dayton, Ohio, assignors to Monsanto Chemical Co., St. Louis, Mo. A wheat rust eradicator comprising water, an emul-

It's a fact: Monsanto's new fertilizer discovery acts like "profit insurance" for you!

ONLY NEW LION E-2* ENDS



COMPRESSION CHAMBER TESTS PROVE NO OTHER AMMONIUM NITRATE CAN MATCH NEW LION E-2 FOR NO-CAKE, DUST-FREE PERFORMANCE

No more customer complaints, costly returns, double handling or extra bookkeeping when you sell new Lion E-2 no-cake ammonium nitrate fertilizer. Here's the whole profit story.

New Lion E-2 is the first truly non-caking ammonium nitrate. Lion E-2 was developed by Monsanto scientists seeking to end one of the major problems plaguing you and your customers: fertilizer caking. Tested in the field under all extremes of temperature and humidity, Lion E-2 just wouldn't cake.

New Lion E-2 won't gum up, clog or bridge in your customer's spreader. The uniform prills are 50% harder... free of irritating dust and fines. They won't break

down, crumble or cake either in shipment or storage.

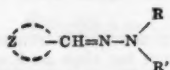
New Lion E-2 takes 20% less of your storage space because it's super-dense. It has the greatest density of any ammonium nitrate made today. Lion E-2 saves your time, storage space, and makes your handling job easier.

New Lion E-2 lengthens your selling season because it's storage-stable. It is not readily affected by temperature changes or humidity. Your

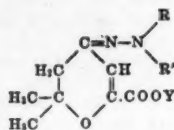
customers can buy any time and store safely until used. LION E-2 may well prove your big year-round volume builder!

Lion E-2 is guaranteed not to cake in the bag in your place or on your customers' farms. From all angles, Lion E-2 is the superior-quality ammonium nitrate... yet it sells at ordinary ammonium nitrate prices. Sell your customers the best... you'll keep old customers coming back and gain many more new ones who want the best: new Lion E-2.

sifying agent, and a hydrazone of a carbonylic dihydropyran selected from the class consisting of hydrazones having the formula



in which Z represents the dihydropyran radical formed by ring-closure of an alkenyleneoxyalkylene chain having a total of from 5 to 11 carbon atoms, R is a hydrocarbon radical free of acetylenic and olefinic unsaturation and containing from 1 to 12 carbon atoms and R' is selected from the class consisting of R and hydrogen; and a hydrazone having the formula



in which R and R' are as herein defined and Y is an alkyl radical of from 1 to 12 carbon atoms.

Industry Trade Marks

The following trade marks were published in the Official Gazette of the U.S. Patent Office in compliance with section 12 (a) of the Trademark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. (See Rules 20.1 to 20.5.) As provided by Section 31 of the act, a fee of \$25 must accompany each notice of opposition.

Kloben, in capital letters, for weed killing compounds. Filed June 6, 1958, by E. I. du Pont de Nemours & Co., Wilmington, Del. First use May 22, 1958.

Malingo, in capital letters, for parasiticide for veterinary use. Filed Aug. 28, 1957, by Fort Dodge Laboratories, Inc., Fort Dodge, Iowa. First use March 29, 1957.

Chipcote, in capital letters, for fungicidal seed dressing. Filed April 7, 1958, by Chipman Chemical Co., Inc.,

Bound Brook, N.J. First use March 5, 1958.

Chlor Ban, in hand drawn capital letters, for insecticide and agricultural fungicide. Filed April 18, 1958, by Hayes-Sammons Chemical Co., Mission, Texas. First use Feb. 12, 1958.

Halts, in capital letters, for chemical weed killer. Filed May 2, 1958, by O. M. Scott and Sons Co., Marysville, Ohio. First use April 24, 1958.

Oil-I-Cide, in capital letters, for insecticides. Filed May 23, 1958, by International Lubricant Corp., New Orleans, La. First use May 12, 1958.

Design, a retort vessel in outline with the words Stephenson Chemicals superimposed in black capitals over the design, for insecticides, pesticides and rodenticides. Filed Dec. 10, 1956, by Calvin P. Stephenson, d.b.a. Stephenson Chemical Co., College Park, Ga. First use Aug. 22, 1956.

Wilt, in capital letters, for chemical preparation for extermination of

CROPLIFE, March 30, 1959—7

weeds in lawns. Filed Feb. 10, 1958, by Diamond Alkali Co., Cleveland, Ohio. First use Jan. 8, 1958.

Design, large outlined W with the word Watkins written in script through the center, for insecticides, fungicides and other household products. Filed March 18, 1958, by the J. R. Watkins Co., Winona, Minn. First use Feb. 17, 1958.

Little Giant, in black script, for insecticides. Filed June 23, 1958, by Cenol Co., Inc., Chicago. First use on or prior to Feb. 3, 1958.

Pano-Brome, in capital letters, for fungicides, insecticides, nematocides, and rodenticides. Filed July 7, 1958, by Morton Chemical Co., Chicago. First use on or about April 28, 1958.

Design, oval ring with the words "Rebuilds Soil Nature's Way" inscribed in the ring and "Ren-o-Vite" in hand-drawn letters through the center of the oval, for organic liquid soil conditioner. Filed Aug. 21, 1958, by Soil Conditioning Service Co., Inc., New Plymouth, Idaho. First use Aug. 12, 1958.

25-Year Tree Test Starts in Virginia

RHOADESVILLE, VA.—A 25-year experiment in the fertilization of loblolly pines has been started near here.

Forestry and agronomy experts hope to prove that the length of time it takes to grow marketable pulp or timber from loblolly pines can be materially shortened through the application of fertilizer.

"We want to see whether using fertilizer on stands of loblolly pine is economically feasible. And we want to see if fertilization will change the structural components or fiber of the wood," said David V. Smith, associate professor of forestry at Virginia Polytechnic Institute.

"We've been using fertilizer in nurseries for a long period but this is the first experiment by a state agency in the use of fertilizer under natural woods conditions," Mr. Smith said.

It takes about 30 years for loblolly pine to produce pulpwood—from 60 to 80 years for it to produce saw timber. The Virginia Agricultural Experiment Station, which is conducting the project, hopes to prove that the farmer can reduce the period of growth enough to offset the expense of fertilizing timberlands.

A three-acre tract of scrub oak woodland, donated for the project by Continental Can Co., and selected because of its lack of natural fertilizing agents, has been cleared.

It will be fertilized and members of the local chapter of the Future Farmers of America will plant 5,000 seedlings.

Fertilizer and financial aid have been donated to the project by the American Agricultural Chemical Co. The seedlings, whose ancestry can be traced for several tree generations, will come from West Virginia Pulp and Paper Co. plantings at Somerville, S.C.

The seedlings will be planted in 48 plots of 48 trees each. Four plots will be left unfertilized for comparison purposes, and the rest will be fertilized with 11 different combinations of lime, superphosphate and rock phosphate. The experiment calls for the addition of other fertilizing chemicals, like nitrogen, to some of the plots after a period of years. Four separate plots will be treated with each combination of chemicals.

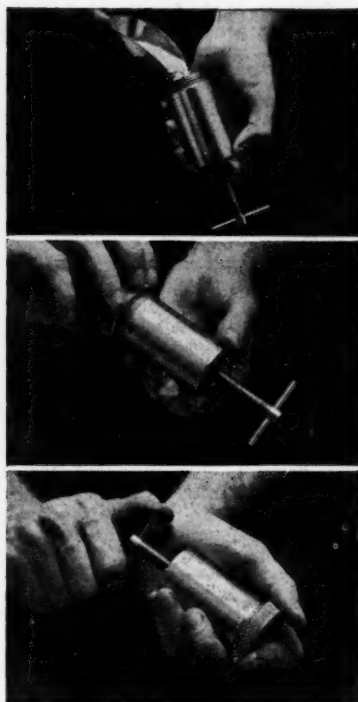
Pail Producing Plant

DALLAS, TEXAS—Southwestern Steel Container Co. here has commenced full operation for the production of steel pails and drums, according to Gordon D. Zuck, president.

The plant is manufacturing all popular sizes, gauges and types of pails, from 1 to 7 gal., Mr. Zuck said.

A production for 15 to 55 gal. drums is planned for installation soon, he said.

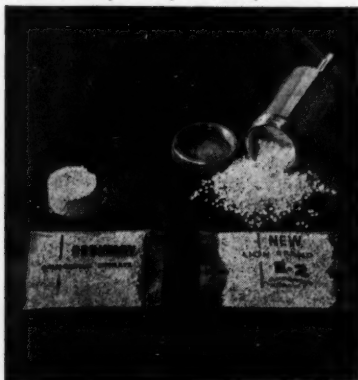
CAKING PROBLEMS FOR GOOD!



HOW TESTS WERE MADE . . .

1. Steel compression chamber is filled with prilled ammonium nitrate.
2. Steel cap closes chamber.
3. Pressure up to 600 lbs. per sq. inch is applied by turning T-bar.

4. See Lion E-2 tested in your own store . . . compare results with any other ammonium nitrate you might be carrying. Mail the coupon request today!



CONVINCING ADVERTISING AND STORE PROMOTION NOW BUILDING FARMER INTEREST IN LION E-2

Eye-catching, hard-selling advertisements in FARM JOURNAL, CAPPER'S FARMER, PROGRESSIVE FARMER, FARM AND RANCH are backed up by state farm publications, local county newspapers. Your customers will be reading about, asking about Lion E-2. Colorful Promotional Aids Hike

Volume. Window and wall banners . . . facsimile bag cutouts to hang from the ceiling . . . full-color framed bulletin board . . . literature and sample dispenser for your counter . . . ad mats for your local use . . . all designed to help you do a bang-up sales job on new Lion E-2.



*T.M. Monsanto Chemical Co.



NEW BROCHURE gives you all the big selling advantages. For your copy, MAIL COUPON TODAY!

Monsanto Chemical Company
Inorganic Chemicals Division
Dept. CL-1, St. Louis 66, Missouri

Name _____

Firm Name _____

Street or R. R. No. _____

City or County _____ State _____

- ☐ Please send free copy of "The Lion E-2 Brand Story"
- ☐ I would like to see Lion E-2 demonstration
- ☐ I am now handling Lion E-2
- ☐ I am not now handling Lion E-2

COTTON, CORN ACREAGE

(Continued from page 1)

creased tonnages predicted to be as much as 20% over last year.

Such optimism is not will-o-wisp type of thinking. It is confirmed fully by the recent U.S. Department of Agriculture report of farmers' intentions to plant and later by the preliminary report on division of cotton farmers' intentions between the alternative choices they have for the 1959 crop.

In the case of cotton the farmer decisions appear to lean heavily to the "A" plan of last year's cotton farm bill amendment. This gave cotton planters a choice between plan "A" with compliance with a basic acreage allotment of approximately 16.3 million acres, or the "B" plan where they would have the privilege of exceeding that acreage allotment base by 40%. The latter plan would

obtain a level of price support of 65% of parity.

The "A" plan won the decision easily, and it now appears that approximately 80% of all cotton produced in this country in 1959 will be grown under the "A" plan with a guaranteed price support at 81% of parity.

This cotton acreage is substantially higher than a year ago, and with the smaller contribution to acreage of the increased "B" plan it is now asserted by USDA that total cotton acreage will amount to approximately 17.3 million acres.

Under the amendment to the cotton provision of the farm law last year it was fixed that USDA would take over all the cotton produced under the "A" plan and sell it back into the market at not less than 10 percentage points higher than the level of support for the "B" plan.

This undoubtedly now means since the "B" plan signup is such a small part of the crop, that USDA will be offering cotton from all of its stocks, not only the 1958 crop but the residue of old crop cotton at this price level unless the market is higher. There is said to have been strong American Farm Bureau Federation pressure to have USDA boost its sales price for new crop cotton to 12 percentage points over the minimum sales level as required by last year's amendment to the cotton provisions of the law.

This all adds up to a firm market for cotton at about 71% of parity which insures the cotton producers either under the "A" or "B" plan an assured market price, and perhaps if some emergency occurs, open market prices for cotton may soar even higher.

Loans for the "B" plan cotton will be available at 65% of the February 1959 parity price basis $\frac{3}{4}$ middling inch at average locations.

For cotton it all adds up to a boom-

ing year for fertilizer and certainly for the pesticidal chemical industry which will again be a stout friend in need if cotton farmers wish to protect their plan "A" cotton from the usual pests.

At the generally increased price support level for corn on a national average basis, corn farmers' intentions have zoomed to nearly 84 million acres, indicating that in the old commercial Corn Belt, the crop will now be planted fence-to-fence.

Sales reports from the fertilizer industry now indicate that while acreage may be up approximately 15%, actual use of plant foods in the old commercial Corn Belt will be up as much as 20%.

The unknown factor in this urgently heavy market demand is how much latent demand is found in the heavily indicated farmer intentions to plant. Ordinarily farmers fix their requirements early as to fertilizer and seed. In some years, purchase commitments for fertilizer lag behind as the Corn Belt farmer waits for weather conditions at planting season. Last year, for example, farmer purchases in the Corn Belt during May were unusually heavy as heavy moisture conditions deferred fertilizer commitments.

It is not to be expected that this condition can be repeated unless again heavy moisture delays field activity in the Corn Belt. But in any event, there is now in the making a heavy demand for plant foods for the Corn Belt and the Cotton Belt—not to dismiss the reaping harvest of sales by the pesticidal chemical industry if the forecasts of the fertilizer industry officials are generally attained.

Farmers Boost Output To Keep Up Gross Income

URBANA, ILL.—Many Illinois farmers are running at a fast pace to keep their income high enough to stay in business, visitors at the University of Illinois Agricultural Industries Forum were told.

Comparing the records of 210 Illinois farmers between 1951 and 1957, D. F. Wilken, farm management specialist, reported that while the farm price index dropped 17% during these years, total expenses of these farmers climbed 33%. But to stay in business, they kept their gross income about the same in 1957 as it had been six years earlier.

To do this, they produced 15% more milk per cow, 18% more eggs per hen, 95% more pounds of beef in feeding operations, 25% more pork and 34% more corn.

Du Pont Announces New Assignments

WILMINGTON, DEL.—New assignments for three men in biochemical sales have been announced by the Du Pont Grasselli chemicals department.

In the home office in Wilmington, Dr. Joseph A. Evans has been named product manager, insecticides and fungicides, and Dr. Burton B. Hodgden, who has been a sales representative in Memphis, comes to Wilmington to be sales promotion supervisor on these products. Dr. Lyall F. Taylor is transferred from a sales territory in California to Wilmington as sales promotion supervisor on herbicides.

Commercial Solvents Corp. Names District Manager

NEW YORK—James F. McCarthy has been named manager of the Cleveland district office for Commercial Solvents Corp., announced James V. O'Leary, general sales manager. Mr. McCarthy joined CSC in 1953 as an industrial chemicals salesman and has served in Chicago and Indianapolis.

The Cleveland district office is the sales center for CSC products in an area covering northern Ohio, West Virginia, western Pennsylvania, and the Buffalo, N.Y. section.

Advertisers who sell only to farmers—choose Successful Farming

Agriculture & Farming advertising pages, 1958

SUCCESSFUL FARMING.....	362.04
Farm Journal.....	217.26
Capper's Farmer.....	201.06

Manufacturers of farm implements, machinery, equipment, tractors, feeds, feed supplements, insecticides, and remedies in 1958 used more advertising pages in SUCCESSFUL FARMING—and have for years! And for excellent reasons—

SUCCESSFUL FARMING's circulation of 1,300,000 concentrates among the nation's best farmers, big producers of corn, grain, livestock, poultry, milk and eggs. They average more than 300 acres, and buy

anything which makes their work easier, steps up production, improves yields—including fertilizer.

And they can afford to buy the best. SF farm subscribers estimated annual cash income from farming has averaged more than \$10,000 for more than a decade, and reached a new high last year.

In SUCCESSFUL FARMING your messages get more interest and response—because SF for 57 years has helped subscribers earn more and live better, has merited influence with its audience not matched by other publications.

Ask your fertilizer dealers about SF's influence in their territory. And ask any SF office about your best fertilizer opportunity.



MEREDITH PUBLISHING COMPANY, Des Moines...with offices in New York, Chicago, Detroit, St. Louis, Philadelphia, Cleveland, Atlanta, Minneapolis, San Francisco, Los Angeles



Doing Business With

Oscar & Pat

By AL P. NELSON
Croplife Special Writer

George Winters came in from his barn work about twelve, took off his cap and shook the rain drops into the wastebasket in the kitchen.

"Holy cow, it's raining, Ma," he said. "Here we've had a bitter cold winter and now all this rain. When am I gonna get on the land?"

"You'll get on it soon enough," said his plump wife. "Dry weather will show up suddenly and then you'll be plowing night and day. With those

lights on your tractor you worked until midnight lots of days last spring. Now sit down and eat corned beef and cabbage. You asked for it."

George Winters smiled, then sniffed interestedly. "Yeah, I did, didn't I? And apple pie, too. Say, Gert, I didn't make a mistake when I picked you, did I?"

"When you finally got around to it," his wife grumbled. "You waited so long I thought I'd have to be an old maid or set my cap for that feller who was 10 years older 'n me."

George chuckled and began eating

his corned beef and cabbage. At that time he opened the current issue of the Price County Enterprise, which had come in the morning mail and which his dutiful wife had laid beside his plate. She knew he was similar to many other American husbands—they liked to read the newspaper at mealtime.

George read some local news items, made remarks about them.

"Hey, I see that young Gruender couple got a baby. Ain't that awful soon? They was just married a little while ago, wasn't they?"

"George Winters!" his wife reprimanded. "The ideas you get. That couple has been married nine months and 20 days. I counted it."

He shrugged. "Well, I can't keep track of everything." He read some more. "Hey, I see where Oscar and Pat are having a big Quack Grass Day."

"Quack grass day!" echoed his wife. "It's March and the snow is still on the ground. Who wants to hear about quack grass now?"

"Well, I dunno," said her husband, taking a drink of milk, then buttering a piece of bread. "Oscar and Pat in their ad say that it won't be long now before the darn old quack grass will start growing before anything else and choke the crops."

"The quack grass almost ruined my garden last year," admitted Mrs. Winters. "You never did get around to cultivating it much."

"I was too darn busy, Gert. I worked my tail off morning till night. I got a big farm to handle. Why should I worry too much about a garden?"

"Well, I want a garden," his wife returned stubbornly. "If you won't tear out that quack grass, I'll hire somebody who will do it."

"Now you are worked up about quack grass. Oscar and Pat say that the time to apply weed killer for quack is when it is about 5 to 8 in. high. A 4 to 5 lb. dose mixed with 10 gal. of water is enough for one acre. The cost is \$5 approximately and Oscar and Pat offer this poundage for \$4 on Quack Grass Day."

"Credit or cash?"

George Winters laughed and so did his wife. "I suppose if Oscar sells it it'll be cash, but if Pat's the clerk, we can get credit. Say, Gert, what would you do with me if I was as tight as Oscar?"

"What would I do? Why I'd pack in a big hurry and go out and look for another man."

"No! Would you?"

"I sure would. I'm thrifty, but I hate tight people like this fellow Oscar."

Her husband blinked. "Hey, Gert, don't shake your fist under my nose like that. I'm not Oscar. I give you \$2 to shop in the department store every time we go to town. Let's go in next week and get some of that weed killer—enough for three acres. We'll save \$3. That's something."

"Well, if only we didn't have to buy it there," said his wife. "I just hate to do business with a man that's as tight as that Oscar. I feel so sorry for his wife."

George Winters chuckled. "She'll never starve though. I understand Oscar has the first five dollars he ever earned out at 8% interest somewhere. And he owns part of the bank."

"I feel sorry for the bank," Mrs. Winters said. "I'll bet he kills a lot of otherwise sound loan applications. I can just hear him saying 'People shouldnt not spendt so much'."

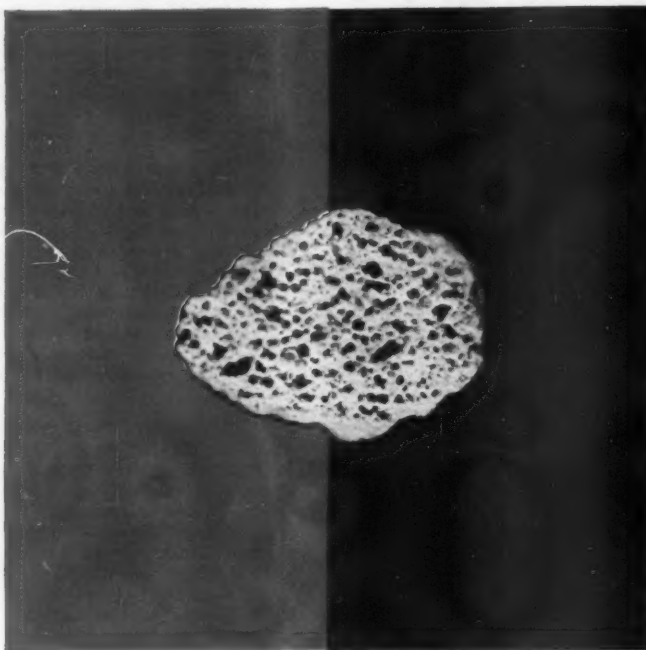
George Winters laughed and so did his wife. "Well," said Winters, "we don't have to live with Oscar, but you've got to admit he's got a nice partner in that Pat. Pat is always willing to help me work out fertilizing problems. He's been after me to use more fertilizer on my corn land, and I've just about figured he's right. I think I'll give him the go ahead on about \$18 per acre for fertilizer this year, Gert. I've only been spending \$14. Pat's upped me from \$8 in previous years and I raised more corn every year he's worked with me."

"Well, all right," grumbled his wife. "I've lived with you long enough to know that you're not exactly the worst farmer in the world. But don't expect me to go into that Oscar and Pat place. If I did I'd tell that tightwad Oscar a few things. Buy your stuff there and then meet me down at the Leader Department Store. I could hang around that store all day, lookin' and hopin'."

"Hopin' for what?"

"Hopin' you'll make that allowance \$20 instead of \$2, you—Oscar!"

Swift's PC-47



This particle of Swift's PC-47 Triple Superphosphate is magnified 9 times actual size.

The 47% A.P.A. Triple Superphosphate with over 14 BILLION AMMONIA TRAPS PER TON

That's positive ammoniating-ability — the kind that builds satisfaction and repeat sales.

Swift's new PC-47 Triple Superphosphate is the result of the extra care Swift devotes to making its phosphate operations serve you better . . . the same extra care in processing to assure complete uniformity of grade and grind . . . the same extra care

that satisfies your delivery requirements.

Before you settle on your source of triple superphosphate, phosphate rock or ground phosphate, ask to have a Swift Phosphate Center representative outline what extra care can mean to you. Or write for illustrated brochure to SWIFT & COMPANY, Phosphate Center, Bartow, Florida.

THE SERVICE SOURCE FOR ALL YOUR PHOSPHATE NEEDS

Swift
104th YEAR

To Serve Your Industry Better

WITH PHOSPHATE ROCK,
GROUND PHOSPHATE ROCK
AND PC-47 TRIPLE SUPERPHOSPHATE

YOU DISCOVER

a

GOLD MINE

in

'59



FIRST!

First of a series of farm magazine ads to sell **GOLDEN URAN** to millions of farmers. A 14-karat opportunity for you to **STRIKE IT RICH!**

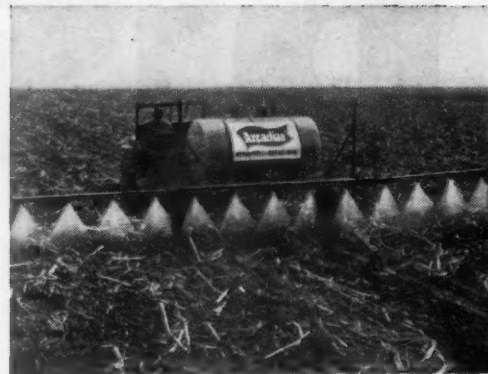
It will pay you



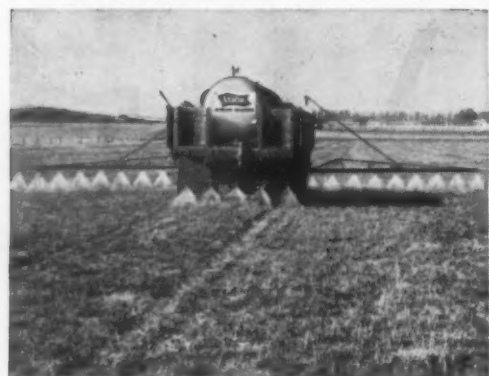
Developed by Allied Chemical research, **ARCADIAN URAN** Nitrogen Solution was first applied to farm crops on farms near Cynthiana, Indiana, in 1950. This was the beginning of the use of Nitrogen Solutions by spray application. Today **URAN** is well-known and widely-used on thousands of farms in many states. *Farmers know **URAN** produces results!*



Here is the first tank carload of **URAN** Nitrogen Solution, delivered in 1951 to Charles Schenk of Vincennes, Indiana. Applied before planting corn, **URAN** helped build yields of well over 100 bushels per acre. Every year since, Mr. Schenk has been plowing down liquid **URAN** Nitrogen on cornstalks to develop uniform growth and yields averaging 115 bushels per acre.



You can apply low-cost liquid **URAN** Nitrogen to many acres per day. You lose no nitrogen to the air—every bit of **URAN** soaks into the soil. **URAN** contains an ideal combination of urea, ammonium and nitrate nitrogen to feed crops well all season long. Thousands of farmers grow continuous corn, using **URAN** and mixed fertilizer to maintain profitable yields.



Spray **URAN on sod**—either before plow-down for row crops, or as top-dressing to build big yields of grass forage rich in protein. Work is fast and easy, since you lift nothing but the nozzle of a hose. Pumps and machinery do the work.



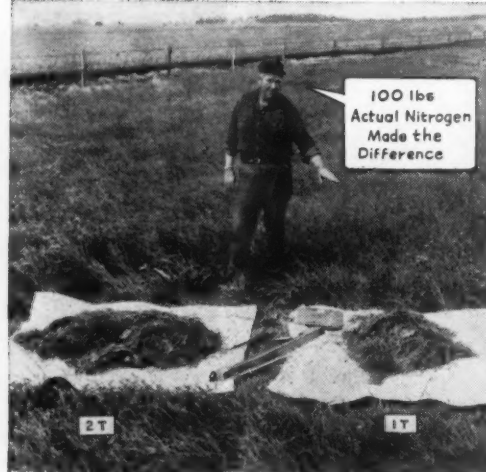
Pre-plant application of **URAN** on bare ground is another effective way to boost crop yields. Other growers side-dress crops with **URAN**, or they add liquid **URAN** to irrigation water and let water carry this powerful nitrogen fertilizer direct to the crop roots.



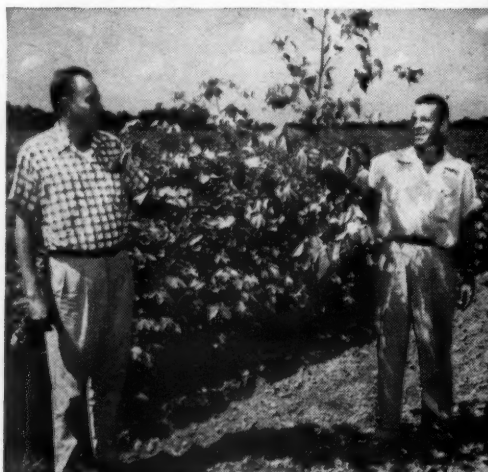
Your **ARCADIAN** supplier pumps golden **URAN** from his storage into a truck tank for quick delivery to your fields. There he pumps it into an applicator for speedy spreading. You can apply liquid **URAN** yourself, or your supplier will do the job for you at low cost.



High yields of corn pay you the best. **ARCADIAN URAN** provides the easy way to supply most of the 160 to 200 pounds of nitrogen per acre needed for money-making yields of 100 bushels per acre or more. Each extra 2 to 3 pounds of nitrogen from **URAN** makes an extra bushel of corn.



An extra ton of dry grass per acre is the dramatic difference produced here by **URAN** Nitrogen. Many soils also need mixed fertilizer and lime. **URAN** Nitrogen often boosts the protein content of grass to equal that of legumes or grain concentrate. Order plenty of golden **URAN** now for all your crops.



High yields of cotton, vegetables, sorghum and other crops are easy to produce with **ARCADIAN URAN** and mixed fertilizer. Give all your crops nitrogen growing power the fast, easy way. Order plenty of golden **ARCADIAN URAN** now, for plow-down, top-dressing and side-dressing.

to make sure you get
genuine **Arcadian**

GOLDEN URAN[®] NITROGEN SOLUTION



TO MAKE IT EASY for you to identify genuine ARCADIAN URAN, the liquid is now being colored a golden yellow. When you buy URAN, look for the ARCADIAN trade-mark on the tank and make sure the liquid is golden yellow. That's positive proof that you are getting the superior producing-power and handling ease of genuine ARCADIAN golden URAN Nitrogen Solution. Don't accept a substitute!

URAN is the original non-pressure Nitrogen Solution used with outstanding success by more and more thousands of satisfied farmers during the last nine years. A triumph of Allied Chemical research, URAN is a superlative combination of urea, ammonium and nitrate nitrogen

in easy-to-use liquid form. With simple equipment, labor-saving liquid URAN is applied to many acres per day. It soaks immediately into the soil to feed crops both quick-acting and long-lasting nitrogen for big yields.

URAN has become so popular among so many farmers that other nitrogen manufacturers are now trying to imitate URAN. But, don't accept a substitute! Make sure you get tried and true, tested and proven, genuine ARCADIAN golden URAN Nitrogen Solution.

NITROGEN DIVISION
 40 Rector Street, New York 6, N. Y.



Hopewell, Va. • Ironton, O. • Raleigh, N.C. • Columbia 1, S.C. • Indianapolis 20, Ind. • Omaha 7, Neb.
 Kalamazoo, Mich. • St. Paul 14, Minn. • Columbia, Mo. • Atlanta 3, Ga. • San Francisco 4, Cal. • Memphis 9, Tenn.

MAKE



GOLDEN URAN[®]

YOUR GOLD MINE IN '59

The two-page farm magazine advertisement you have just seen is the opening gun in a BIG 4-WAY GOLDEN URAN PROMOTION. Millions of farmers will be seeing and hearing about the superlative advantages of ARCADIAN[®] GOLDEN URAN Nitrogen Solution, in ADS... on BILLBOARDS... over RADIO and TV! This powerful campaign protects you from competition, expands your sales, increases your profits!

Old customers and new customers throughout your selling area will be coming to you—looking for... demanding only genuine ARCADIAN GOLDEN URAN! Be ready to ride the golden tide to your biggest ARCADIAN URAN year ever! Stock up! Fill your tanks with GOLDEN URAN. Contact your ARCADIAN representative today!

GOLDEN URAN



NITROGEN DIVISION
40 Rector Street, New York 6, N. Y.



Hopewell, Va. • Ironton, O. • Raleigh, N.C. • Columbia 1, S.C. • Indianapolis 20, Ind.
Omaha 7, Neb. • Kalamazoo, Mich. • St. Paul 14, Minn.
Columbia, Mo. • Atlanta 3, Ga. • San Francisco 4, Cal. • Memphis 9, Tenn.

AND STAKE YOUR CLAIM ON THE FULL **Arcadian** LINE

LIQUID NITROGEN PRODUCTS

URAN[®] Nitrogen Solution
Urea, Ammonium and Nitrate Nitrogen
FERAN[®] Nitrogen Solution
Ammonium and Nitrate Nitrogen
NITRANA[®] Nitrogen Solution
Nitrate and Ammonia Nitrogen
Anhydrous Ammonia
Concentrated Ammonia Nitrogen

DRY NITROGEN PRODUCTS

AMMONIUM NITRATE
Pelleted Nitrogen Fertilizer
UREA 45 Nitrogen Fertilizer
Pelleted Urea Nitrogen
A-N-L[®] Nitrogen Fertilizer
Nitrogen with Magnesium
AMERICAN NITRATE of SODA
Nitrate Nitrogen and Sodium

All of the above products are for direct application to the soil. ARCADIAN Nitrogen is also the leading source of nitrogen used in the manufacture of mixed fertilizers.

CLEARING HOUSE

(Continued from page 9)

that are needed by farmers raising these particular crops.

A serviceman is available to customers upon request and, in between these occasions, he pays calls on regular customers in an effort to help them farm their land more profitably. He does not do any selling as such. The farmer will usually ask him to have the store send him a supply of a particular fertilizer, fungicide or farm tool that has been discussed during their meeting. If the serviceman feels that the farmer is in the market for additional merchandise, he turns a note into the store and a salesman is dispatched to call on the farmer. He is usually one of the store personnel who can follow up the prospect in between his regular duties. This arrangement has worked out very economically for this farm store supply outlet without having to incur the additional expense of a salesman who may also become annoying to farmers when continually chasing after them to make a sale.

"Any farm store dealer can keep harping about the quality of the products that he handles and play up price," says Mr. DiGirolam, "which is nothing new to farmers. However, our policy of trying to help them first, then following up with the sale of our products has been highly accepted by our customers. This has brought us greater sales response from the farmers in our area."

Before the farming season begins, the serviceman pays a visit on all Parkhurst customers. He helps them start up their farm equipment which has been idle all winter long and provides them with maintenance literature on the particular type of equipment that they may have. He learns the particular crop the farmer is going to raise and offers suggestions in getting started properly. Information on all types of crops is also available to the farmer with particular stress being placed on fertilizers, insecticides and fungicides.

In many instances, the serviceman has shown some farmers how they may use their irrigation systems to spray a combination nutrition fertilizer and insecticide through their pipe lines doing two important jobs at one time. Also, that dusting by plane in certain growth stages of blueberry crops may be best, and he can make arrangements for this service if it is so desired. Often, a new piece of farm equipment may have come on the market which can be of tremendous use to the farmer and this is brought to his attention. If necessary, the serviceman will bring a demonstrational unit out to the farmer and show him how to operate it. By creating a need for a particular service, product or piece of equipment, the customer orders it himself which results in a "pressureless" type of selling program.

Throughout the year, the Parkhurst Farm & Garden Supply Co. tries to maintain a steady contact with its customers. Once a year, the store runs an open house when it features its full line of farm equipment and related lines to its customers. Visitors are urged to browse through the store and its shop, motion picture films of farm equipment are run and refreshments are served. The turnout has become larger year after year, and it has now become a popular annual event looked forward to by the store's customers.

The store has expanded to include garden and lawn seeds, housewares, hardware, paints and other types of household needs. This is a major effort to attract farm women into the store. Periodically, during the year, an assortment of this merchandise is

stocked on special display gondolas and offered at a special sale. Termed an "88¢ sale" every item on display here sells at this price or a combination of these items for 88¢. Special merchandise has been purchased so that there is something here for every member of the family and this has helped to attract the entire household to this location.

A service department is housed in a portion of the 50 by 130 foot store. This is open to all customers for inspection and is a popular feature of this farm store. By offering complete service and parts on all equipment and machinery sold by this dealer, increased loyalty to the brands handled by him is enjoyed.

"As a customer service, we have a bulletin board in our store where farmers can list any equipment, machinery or other items that they may

wish to sell," explains Mr. DiGirolam. "We also post the daily weather conditions which are noted by many of our customers. Some call us on the phone for this information which affords us an extra opportunity of maintaining contact with them. As a result of our being able to act as a 'clearing house' for all sorts of customer needs, we have enjoyed better business each continuing year."

Town Okays Construction Of Three Liquid Tanks

STAYTON, ORE.—The Stayton city council has approved issuance of a building permit to the Santiam Farmers Cooperative for construction of three liquid fertilizer tanks on its property on First Street.

The action, however, carried the stipulation that the tanks be used for "storage only" thereby eliminating any possibility that the fertilizer would be manufactured or processed at the plant.

REMEMBER TO ORDER

CHASE BAGS

There's None Better!



WEEDS AND PESTS WILL DISAPPEAR
BROYHILL SPRAYERS ARE LOW IN COST
NO MONEY OR LABOR IS EVER LOST!
THE BROYHILL CO. DAKOTA CITY, NEBR

Make SMIROW TANKAGE

the sales builder in your fertilizer

SMIROW is the quality, natural organic supplement to chemical plant foods.

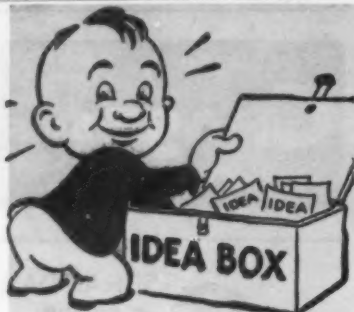
- ★ **Valuable to your customers**
because it provides for *controlled release* of plant nutrients for health, steady growth and good color. SMIROW Tankage is 100% natural organic.
- ★ **Valuable to your dealers**
because it is plainly visible in fertilizer — they can point to it in selling *your brand*.
- ★ **Valuable to your employees**
because it's less dusty. No hazard in handling.
- ★ **Valuable to you**
for all these reasons. SMIROW Tankage provides a built-in sales stimulant in a time of keen competition.

SMITH - ROWLAND CO.

P. O. Box 1219, Norfolk 1, Va.

A DIVISION OF SMITH-DOUGLASS COMPANY, INCORPORATED

Let us figure the cost of SMIROW tankage delivered to your plant.



What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6888—Insecticide Applicator

An applicator for soil insecticides has been announced by Noble Manufacturing Co. According to company literature, the unit's main element is a 50 lb. capacity hopper that fits all planters, listers or seeders, with one hopper for every two or three rows



being worked. The hopper is powered by the drive shaft of the planter. Flexible steel drop tubes in the hopper bottom direct the granules into proper position for effective killing. The machine has universal mounting, the company says, and by means of a split drive sprocket can be attached to the planter's drive shaft with-

out removing the shaft. A calibrated metering dial gives the operator positive control of application rate. Details are available by checking No. 6888 on the coupon and mailing.

No. 6886—Cotton Insecticide Folder

A folder describing the use of Sevin insecticide on cotton is now available from Union Carbide Chemicals Co., division of Union Carbide Corp. The features of the insecticide are explained in the folder, the company says, as well as a listing of insects on which it is effective. The folder is in color and is illustrated with photos of a number of different insects. Check No. 6886 on the coupon and mail for a copy.

No. 6887—Formulation List

Formulations aimed at increasing effectiveness of household, garden and truck crop insecticides against resistant insects are included in a folder being offered by Fairfield Chemicals, Food & Machinery and Chemical Corp. The folder lists suggested formulations for dual purpose home and garden sprays, horticulture sprays, fungicide additives, emulsifiable garden sprays and concentrates and garden and truck crop dusts.



Also included are model front and back package labels with accepted wordage for declaration of contents and directions for use. Check No. 6887 on the coupon and mail for details.

Also Available

The following items have appeared in the What's New section of recent issues of CropLife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6883—Quack Grass Movie

Agricultural losses to quack grass and the control of this weed grass are explained in a motion picture produced by the Dow Chemical Co. Entitled "Quack Grass, the Perennial Guest," the film likens quack grass to a burglar who has become a guest by being allowed to remain in farm fields. In sequences filmed in the field, the picture shows the control of this grass in various crops with pre-plant, post harvest or in-crop applications of Dowpon. The film is available for free bookings. Check No. 6883 on the coupon and mail to this publication.

No. 6885—Pelleted Brush Control

"Dybar," a pelleted formulation of fenuron for control of woody brush, has been introduced by E. I. du Pont de Nemours & Co. When the pellets are scattered over brush-infested areas, the company says, they give positive brush control with one treatment. The pellets are nonvolatile and can be used near sensitive crops, are noncorrosive, nonflammable and present no toxicity hazard to people or animals when used as directed, the company says. The 1/4 in. cylindrical pellets are applied just as they come from the package. They can be scattered by hand, applied with a table-spoon at the base of individual stems or clusters, applied with mechanical broadcaster or spread by airplane. Complete information can be obtained by checking No. 6885 on the coupon and mailing to this publication.

No. 6882—Fertilizer Spreaders

The Ezee-Flow division of Avco Distributing Corp. announced the availability of its 1959 line of fertilizer spreaders. Spreader models 120D (illustrated), 100D and 88D, of 12 ft., 10 ft. and 8 ft. widths, feature a patented removable cam agitator that can be lifted out of the hopper



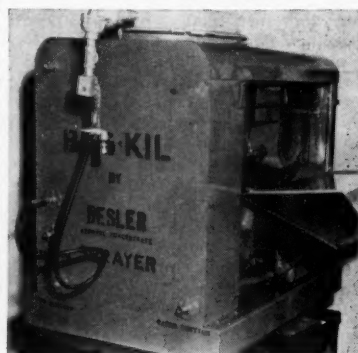
for easy cleaning, the company said. The cam agitator grinds, mixes, levels and forces fertilizer out port openings through positive camming action, the company said. The agitators are case-hardened to crush the hardest fertilizer lumps. Complete product and soil test kit information can be obtained by checking No. 6882 on the coupon and mailing.

No. 7402—Bulletin on Motor Starters

The advantages of centralizing motor starters in control panels are discussed in a 4-page technical bulletin offered by the Richardson Scale Co. Bulletin 58-C cites initial costs, wiring, engineering time and maintenance costs savings that result from mounting the starter centers in control panels at the time the panel is constructed, the company said. Six photographs of motor starter centers mounted in Richardson control panels at various plants illustrate the bulletin. For copies, check No. 7402 on the coupon and mail.

No. 6884—Aerosol Insect Sprayer

A new model of the Bes-Kil aerosol insect sprayer has been announced by Besler Corp. The model is skid-mounted and without a tank, but otherwise is identical to the trailer mounted models, the company says. The Bes-Kil is an adaption of the



smoke screen machine used by the U.S. Navy in World War II, the company says, and tests show it is effective for killing flies, mosquitoes and other insects. A feature of the machine, according to company literature, is that it applies the insecticide outside of the machine, so that the chemical does not lose potency by being overheated. It can also be used as a wet-spray machine, with a spray boom or by hand. Check No. 6884 on the coupon and mail for details.

No. 7406—Laboratory Service Data

The University of Wisconsin Alumni Research Foundation has announced the availability of a new brochure and a series of leaflets describing the various laboratory services the group offers to industries. Included among the services discussed are nutrition, chemistry, animal studies, toxicity testing, microbiology,

Send me information on the items marked:

- | | |
|---|--|
| <input type="checkbox"/> No. 6879—Polyethylene Coated Bags | <input type="checkbox"/> No. 6887—Formulation List |
| <input type="checkbox"/> No. 6881—Brush Control Pellets | <input type="checkbox"/> No. 6888—Insecticide Applicator |
| <input type="checkbox"/> No. 6882—Fertilizer Spreaders | <input type="checkbox"/> No. 7389—Car Shaker Data Sheet |
| <input type="checkbox"/> No. 6883—Quack Grass Movie | <input type="checkbox"/> No. 7402—Bulletin on Motor Starters |
| <input type="checkbox"/> No. 6884—Aerosol Insect Sprayer | <input type="checkbox"/> No. 7406—Laboratory Service Data |
| <input type="checkbox"/> No. 6885—Pelleted Brush Control | <input type="checkbox"/> No. 7408—Air Delivery Feeder |
| <input type="checkbox"/> No. 6886—Cotton Insecticide Folder | |

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COMPANY

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(Sec. 34.9,
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MINNEAPOLIS,
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BUSINESS REPLY ENVELOPE

No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

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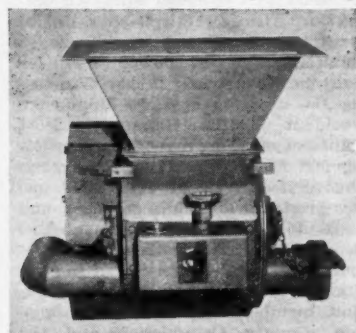
Reader Service Dept.

Minneapolis 40, Minn.

insecticide testing and food technology. The brochure is fully illustrated, showing the various phases of laboratory research in actual photos. The individual leaflets discuss the specific service in detail. For information on how to receive this data, check No. 7406 on the coupon and mail.

No. 7408—Air Delivery Feeder

Ripco Air Systems has introduced the Ripco truck conversion kit for flexible air hose delivery of granular material. With the kit, the company says, dealers and suppliers can convert present rolling stock, either flat bed or dump style, to an air delivery system. Simplicity of installation is one of the unit's features, the company says. The feeder installed at the rear of the truck bed is hydraulically



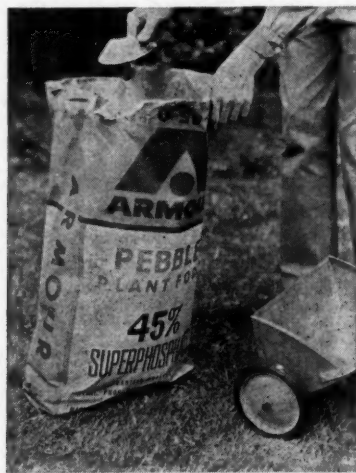
driven, eliminating the need for long power take off shafts and flexible drives. On flat bed trucks, the feeder can be used as a bag to bulk delivery, or gravity fed from a dump style body. More information is available. Check No. 7408 and mail for details.

No. 7389—Car Shaker Data Sheet

A data sheet which presents revisions on Syntron's recently introduced unbalanced-motor vibrating car shaker is available from Syntron Co. The illustrated sheet gives complete descriptions, electrical and mechanical data and specifications on this unit. The car shaker is designed to facilitate emptying of railroad hopper cars without damaging the cars. For a copy of the data sheet check No. 7389 on the coupon and mail to this publication.

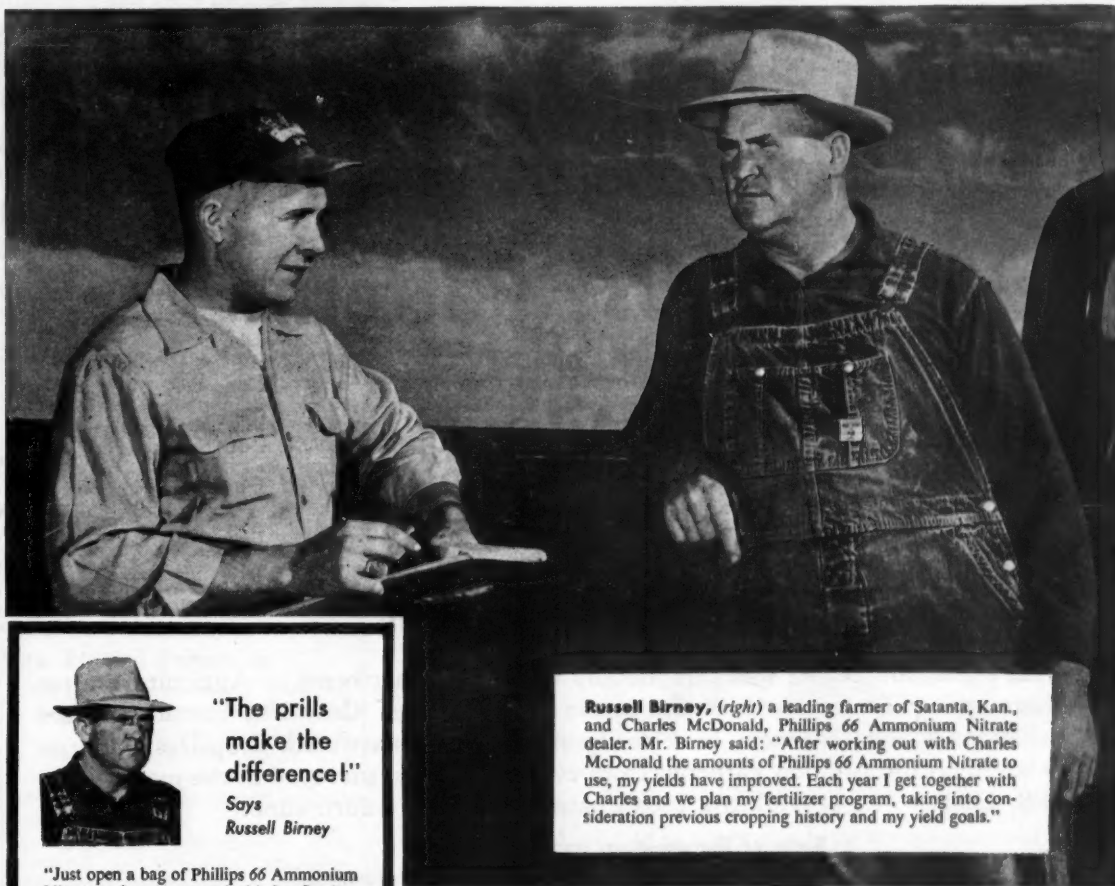
No. 6879—Polyethylene Coated Bags

Bags with a coating of polyethylene to keep superphosphates dry during shipping and storage have been announced by Union Carbide Plastics Co. and Kraft Paper Bag Corp. Because superphosphate has a



tendency to dry out in plain bags, the firms developed the polyethylene coating to prevent it. The bags will not split at creases or accept moisture, literature explained. It was noted that the multi-wall bags made with polyethylene coated kraft paper are approximately 40% lighter than most conventional paper bags. Details can be obtained by checking No. 6879 on the coupon and mailing to this publication.

PHILLIPS 66 ads like this appear regularly in CAPPER'S FARMER, PROGRESSIVE FARMER, FARM JOURNAL, FARMER-STOCKMAN and FARM and RANCH... part of a continuing program to help dealers sell more mixed fertilizers and PHILLIPS 66 AMMONIUM NITRATE.



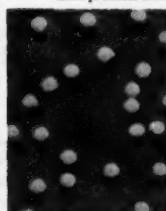
Russell Birney, (right) a leading farmer of Satanta, Kan., and Charles McDonald, Phillips 66 Ammonium Nitrate dealer. Mr. Birney said: "After working out with Charles McDonald the amounts of Phillips 66 Ammonium Nitrate to use, my yields have improved. Each year I get together with Charles and we plan my fertilizer program, taking into consideration previous cropping history and my yield goals."



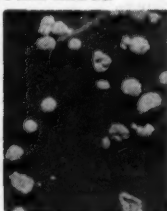
"The prills make the difference!"
Says
Russell Birney

"Just open a bag of Phillips 66 Ammonium Nitrate and you can see why it's free flowing. The prills are always hard, dry and round. I prefer to put my nitrate down with a wheat drill, so I feel I must have Phillips 66 Ammonium Nitrate because it is always free flowing."

Both products shown 2 times actual size



New Phillips 66 Ammonium Nitrate



Ordinary Ammonium Nitrate

Proof of the difference

is in these unretouched photographs. Thanks to Phillips new and different electronically-controlled process—and polyethylene-lined bags—you get round, hard, dry and uniform prills that stay that way in storage and during application. This means uniform distribution for more even feeding and higher yields. It will pay you to ask for Phillips 66 Ammonium Nitrate, America's best 33.5% nitrogen fertilizer.

A better product and dealer help give him bigger yields and profits

"I've had part of my land in continuous maize for four years," said Mr. Birney. "That's why it is necessary for me to put down the right amounts of nitrogen. I've found Phillips 66 Ammonium Nitrate gives me the free flowing material I require."

"As a check, I left a strip in my maize that received no Phillips 66 Ammonium Nitrate. That strip produced just half the yield of the nitrogen-fertilized maize. That proved to me that I can't afford skips that an ordinary ammonium nitrate might

cause by clogging or bridging in the applicator."

Like Mr. Birney, other successful farmers find that the combination of Phillips 66 Ammonium Nitrate... and friendly assistance from their fertilizer dealer helps them get higher yields, more profit.

See your fertilizer dealer about a balanced fertilization program... using Phillips 66 Ammonium Nitrate and, where needed, his high quality mixed grades.

"A good name **Phillips 66** to grow by"



PHILLIPS PETROLEUM COMPANY. Sales Offices: Amarillo, Tex.—First Nat'l Bank Bldg. • Atlanta, Ga.—1428 West Peachtree Street, Station "C" P. O. Box 7313 • Bartlesville, Okla.—Adams Bldg. • Chicago, Ill.—7 South Dearborn St. • Denver, Colo.—1375 Kearney St. • Des Moines, Iowa—6th Floor, Hubbell Bldg. • Houston, Tex.—6910 Fannin Street • Indianapolis, Ind.—3839 Meadows Drive • Kansas City, Mo.—201 E. Armour Blvd. • Minneapolis, Minn.—215 So. 11th St. • New York, N. Y.—80 Broadway • Omaha, Neb.—3212 Dodge St. • Pasadena, Calif.—317 North Lake Ave. • Raleigh, N. C.—401 Oberlin Road • Salt Lake City, Utah—68 South Main • Spokane, Wash.—521 East Sprague • St. Louis, Mo.—4251 Lindell Blvd. • Tampa, Fla.—3737 Neptune St. • Tulsa, Okla.—1708 Utica Square • Wichita, Kan.—501 KFH Building.

Oregon Legislators Amend Fertilizer Bill

PORTLAND, ORE.—Amendments to the Oregon fertilizer law have passed the Oregon Legislature and were signed by the governor. The new amendments will take effect about June 10, 90 days after the governor's signature.

One amendment provides that the director of agriculture may set inspection fees, but not to exceed 10¢ a ton as was the case in the old law. The new amendment is expected to cause sharply lower inspection fees as the department has a large surplus which it can use only for inspection work.

The second amendment provides that the director may define what is a fertilizer element. Heretofore the director had no control over what could be called a fertilizer material—he was forced to register all materials requested as fertilizers. Under

the amendment the director will designate, after consultation with the soils department of Oregon State College, and due public hearing, what constitutes fertilizer materials and a fertilizer.

The third amendment changes the start of the fiscal year from July 1 to January 1.

The amendments were supported by the Pacific Northwest Plant Food Assn. after consultation with the department of agriculture.

Named Distributor

PORTLAND, ORE.—The L. H. Butcher Co. has been named as West Coast distributor for Douglas Chemical Co.'s grain sanitation chemicals.

The Butcher Co. reports that the addition of the Douglas products now rounds out its complete line of agricultural chemicals.

The firm will distribute Douglas products through three of its six sales offices at Portland, Seattle and Salt Lake City. Headquarters are in Los Angeles.

Thiodan Shows Promise In Virginia Experiments

NORFOLK, VA.—Promising control of potato beetle, flea beetle and potato leaf hopper has been noted in experiments at the Virginia Truck Experiment Station here, according to a report by R. N. Hofmaster, entomologist. Following apparent resistance of these insects to a number of insecticides, applications of Thiodan have given high percentage of control against flea beetle, potato leaf hopper, potato beetle and potato aphid, he said.

The material, a heterocyclic sulfur compound made by Niagara Chemical Division of Food Machinery & Chemical Corp., has been cleared by USDA for use as a foliage spray on potatoes.

According to the results of experiments in 1958, reductions in flea beetles and leaf hoppers were 98% and 99% after applications of 1.0 and 1.5 qt. emulsion to the acre, Mr. Hofmaster said.



GROUNDBREAKING—A. W. Mohr, president of California Spray-Chemical Corp., turns the first shovelful of earth in groundbreaking ceremonies for Calspray's \$4,600,000 fertilizer plant in Kennewick, Wash. Witnessing the occasion is J. E. Magnuson, president of the Kennewick Port Commission. Calspray officials assisting Mr. Mohr were H. J. Grady, executive vice president, P. S. Williams, vice president and chief engineer, and L. R. Jones, resident engineer. Also on hand to greet the Calspray representatives were the mayors of the tricity, Pasco, Kennewick and Richland, members of the Port Commission, County Commission and the Kennewick Chamber of Commerce.

New Gibberellic Acid Use Found by Scientists

RIVERSIDE, CAL.—Another possible economic use for gibberellic acid has been found by University of California scientists here.

Oscar Lorenz, vice chairman and Frank Takatori, specialist in the department of vegetable crops, say the chemical may benefit celery growers.

Applied to winter celery three weeks before harvest, gibberellic acid increases the length of petioles or shanks. In winter, celery shanks often don't grow long enough for marketability.

The chemical is especially good on short-top or bolt-resistant varieties such as 16-11, the Riverside scientists add.

Still in a trial stage, the acid is not ready for a firm recommendation. However, growers wishing to try it should use between 25 and 50 ppm in a spray, with 100 gal. of water an acre, they suggest.

Mr. Lorenz and Mr. Takatori caution growers against applying gibberellin more than a month ahead of harvest, since it causes seed-stalks to form rapidly. This can result in the crop being completely unmarketable.

Chiefly, the chemical will be useful in Los Angeles, Orange, San Diego, Ventura and Monterey counties, which have large crops of winter celery, they believe.

Eastern States Farmers Names New Managers

WEST SPRINGFIELD, MASS.—Perry H. Wetzel has been promoted to manager of the agricultural chemicals purchasing department, and Cleon Phelps to manager of plant operations for Eastern States Farmers' Exchange.

Mr. Wetzel replaces Philip Catir, who was promoted to feed purchasing. Mr. Phelps was formerly manager of the agricultural chemicals blending and distribution plant.

SPITTLEBUGS DUE

COLUMBUS, OHIO—Ohio farmers were warned to expect another spittlebug attack this year by Dr. R. P. Holdsworth, Jr., Ohio State University entomologist. Dr. Holdsworth said those who didn't follow control recommendations could expect to lose 25% of their first growth clover and about 15% of their first growth alfalfa.

**You'll get a better understanding of the
fertilizer market from this valuable new book**

Crop-Use Patterns of Fertilizer

in the United States
by

J. R. ADAMS

L. B. NELSON

D. B. IBACH

U.S. DEPARTMENT OF AGRICULTURE

This significant report was compiled by the U.S. Department of Agriculture after thorough studies of fertilizer use in the United States. Crop-Use Patterns covers questions which, until now, have not been adequately answered. Crop-Use Patterns is based on information gathered from every fifth farm surveyed in the most recent U.S. Census . . . providing a broad base of national information.

Some of the questions answered are:

what portions of croplands receive fertilizer
how fertilizer is used among major crops
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Specific fertilizer uses analyzed are:

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Oats Cotton Potatoes
All Crops and Cropland Pasture
Hay and Cropland Pasture

All graphically presented with 33 maps and numerous charts.

You'll want your own personal copy of Crop-Use Patterns. And you'll want to keep it handy where you can easily refer to its wealth of practical information about the use of fertilizer.

To obtain your copy of Crop-Use Patterns, fill in and mail the coupon below . . . the supply is limited.

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State

Arkansas County Launches Intensive Soil Test Program

FAYETTEVILLE, ARK.—An intensive soil testing program for Lawrence County, Arkansas, was launched recently with a "Soil Test Festival" in Walnut Ridge. More than 200 farmers attended. Sponsors of the project are the county agricultural extension service and the National Plant Food Institute.

This pilot effort in Arkansas is aimed at getting every Lawrence County farmer to have his soil tested. The project will be expanded to other counties throughout the state next year by the Arkansas Extension Service, provided the program is successful in Lawrence County.

Featured at the festival in Walnut Ridge were talks by Dr. Robert L. Beacher, southwest regional director for NPTI; W. A. Anderson, county agent; John Carter, associate agent, and Donald Adams, extension soils specialist.

The extension agents outlined results of previous fertilizer demonstrations in the area, and explained the economic values which can be obtained by more widespread adoption of recommended fertilization practices in accordance with soil testing.

They calculated that combined revenue from cotton, corn, soybeans and rice could be boosted by more than \$1.6 million annually if current recommended practices were followed.

In his presentation, Mr. Beacher cited the success of similar programs conducted in several southeastern states, some of which were cooperative NPTI projects.

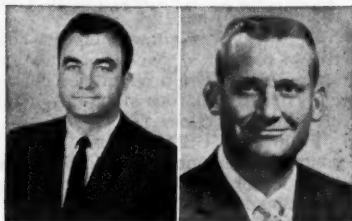
Sweet Clover Aphids Extend Area in Canada

WINNIPEG—Sweet clover aphids are rapidly extending their area of infestation in both Manitoba and Saskatchewan and may cause serious damage to clover stands this coming summer.

In mid-September last year, plots at Saskatoon, Sask., were found to be severely infested. This was the location of the first reported occurrence of sweet clover aphid in Saskatchewan. In 1957 damage was observed at the plots at Saskatoon, but no identification was made at that time. Shortly after the 1958 outbreak, the aphid was also found in small numbers in sweet clover in the east-central part of the province.

The pest first entered Canada in 1956, damaging sweet clover plots in early July at the University of Manitoba. It was present in non-injurious numbers at Portage la Prairie, Man., in the spring of 1957. Severe damage from the aphids occurred at Portage la Prairie and Morden, Man., in late June and early July of 1958.

Warnings and control measures are being circulated.



James E. Corgill H. Parker Rea

NEW SALESMEN—James E. Corgill and H. Parker Rea have joined the staff of Bradley & Baker, New York, as sales representatives out of the firm's Atlanta, Ga., office. Mr. Corgill will cover the northern half of Alabama and Mississippi and all of Tennessee. Mr. Rea will cover the southern portions of Alabama and Mississippi and parts of western Florida and southern Louisiana.

Reader Views

To the Editor:

Thank you very much for the very excellent treatment of the "Case for Pesticides" in the wildlife-pesticide matter which was presented in the March 9 issue of Croplife.

We very much appreciate your continued and wholehearted support of our program in this instance.

Lea S. Hitchner
Executive Secretary
National Agricultural
Chemicals Assn.
Washington, D.C.

Iowa Firm Installs Liquid Fertilizer Plant

OSKALOOSA, IOWA—Allied Gas and Chemical Co., a branch of Hackert Enterprises, is completing installation of a new liquid fertilizer plant on Highway 63. Manufacturing operations of Gro-Mor liquid fertilizer are to start in the near future, according to Henry Hackert, owner and manager.

Two new steel buildings have been erected by the Garden Construction Co. to house the new plant, which will have a capacity of 40 tons of liquid fertilizer an hour. The mixing plant is in a 24 ft. by 48 ft. building, and a second building, 26 ft. by 72 ft., has been built for storage. A new soil testing laboratory has been established at the downtown headquarters of the company.

Richard Van Weelden is in charge of the fertilizer plant, with a force of 12 workers at the main plant and the bulk plant. Hackert Enterprises includes dealers at Hedrick, Cedar, Fremont, Rose Hill, Washington, What Cheer, Montezuma, Pella and Knoxville. Allied Gas and Chemical Co. also operates a fleet of trucks and sells fertilizer tanks and spray equipment.

Monsanto Announces New Methyl Parathion

ST. LOUIS—Monsanto Chemical Co. has announced that it has developed a stabilized methyl parathion for dust formulations which, the company states, resists decomposition during extended storage at high temperatures.

In accelerated laboratory tests conducted by Monsanto, the new, stabilized methyl parathion, prepared as a dust concentrate, showed less than 10% loss of activity after 12 weeks of storage at a constant temperature of 123° F., the company said. This is estimated by Monsanto to be equivalent to more than one year of warehouse storage at normal temperatures.

The stabilization of methyl parathion for much longer storage life of dust formulations has been achieved without affecting either the insecticidal or residual activity of the compound, according to Monsanto. This was confirmed both by extensive laboratory work and experimental field applications, the company said.

Monsanto has not divulged the chemistry of its stabilization system. However, officials of the major cotton-producing states concerned visited the company's Agricultural Research Laboratory at St. Louis recently for a discussion of the development with the company's scientists.

Quantities of the material are being shipped to Monsanto's major formulating customers for preparation of dust formulations to submit for state label approvals in time for the 1959 cotton growing season. Monsanto is recommending the use of the stabilized material only in dust formulations.

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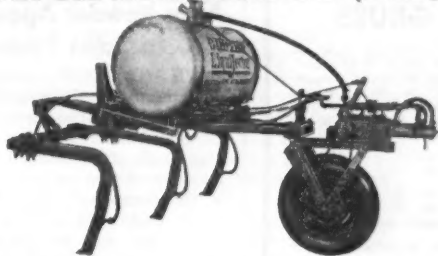
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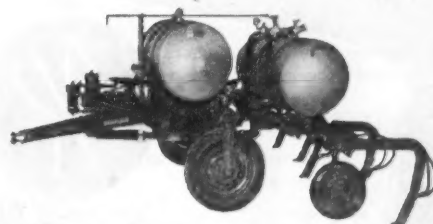
Liquijecting fertilizer solutions directly into the ground is a great advance in economy and efficiency over the spray-boom method. Dempster Liquijectors Type S can be supplied with black iron, aluminum or fiber glass tanks; Liquijector solutions pumps with cast iron or non-corrosive nyrasit castings. Shown above, Dempster Type S Liquijector on Model 500 Dempster 3-point hitch hydraulic lift Tool Carrier.

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Thousands of Dempster Liquijectors now in operation testify to the lasting efficiency of these anhydrous applicators. Available in every size from tractor-mounted 60 gallon machine to large Carrier-Mounted and semi-mounted models covering 14 ft. at a pass. Above: Semi-Mounted Liquijector with positive, accurate ground wheel drive of Liquijector Pump.

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Hubbard S. Caven

Texas Gulf Sulphur Co. Names Two Vice Presidents

NEW YORK—Election of Hubbard S. Caven and A. Nelson Myers as vice presidents of Texas Gulf Sulphur Co. was announced by Fred M. Nelson, chairman.

Mr. Caven has headquarters at the company's office in Houston, Texas. Prior to joining the company in 1947, Mr. Caven was a member of the law firm of Abney and Caven at Marshall, Texas. He graduated from the Uni-



A. Nelson Myers

versity of Texas Law School in 1927. Mr. Myers is manager of sales and operates from the New York office. He joined Texas Gulf Sulphur as assistant sales manager in 1946. From 1940 to 1946 he was vice president in charge of sales for Chilean Nitrate Sales Corp. He was previously a divisional sales manager of Virginia-Carolina Chemical Corp.

Electric Reduction Starts Expansion Program

TORONTO—Electric Reduction Co. of Canada is starting on its latest big expansion phase in Eastern Canada. In a multi-million-dollar program, production of sulphuric acid and phosphoric acid as well as sodium phosphates and other products. Plants will be located at Port Maitland, Ont., where the Grand River enters Lake Erie.

Atlas Powder Appoints Two to Sales Posts

WILMINGTON, DEL.—The appointment of William R. Lucas as manager of Atlas Powder Co.'s regional chemicals sales office in Chicago and of Edward M. Simon, Jr., to succeed him as assistant manager of the company's New York regional office was announced by Edward J. Massaglia, vice president and general manager of Atlas' chemicals division. Both appointments are effective April 1.

Saskatchewan to Supply Dieldrin At Cost for 'Hoppers

REGINA—Saskatchewan's Department of Agriculture will supply dieldrin at cost direct to rural municipalities and local improvement districts for grasshopper control, V. B. Holmes, assistant director of the Plant Industry Branch, told delegates attending the annual grasshopper control conference at the provincial museum.

Mr. Holmes told delegates that farmers would order their chemical requirement through the municipality. The price of the dieldrin to the municipality will be about 15¢ an acre, he said.

Last year, about 1½ million acres were sprayed by farmers to control 'hoppers. Crops valued at many millions of dollars were saved by farmers using recommended cultural practices and applying chemical to control these pests, Mr. Holmes said.

The cost of grasshopper chemicals has been lowered over the years. The speaker noted that such costs were reduced from a high of \$3 an acre to the present level of about 15¢ an acre.

Hercules Net Declines From 1957 Record

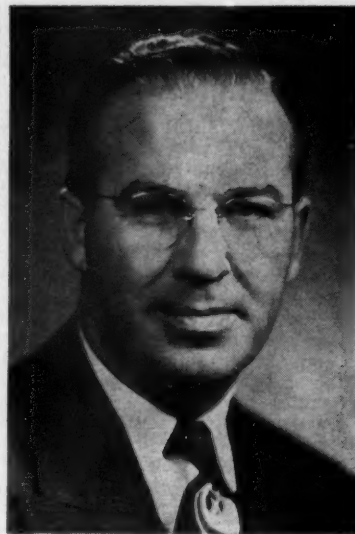
WILMINGTON, DEL.—Hercules Powder Co. has reported net sales and operating revenues of \$236,513,000 for 1958, a decline of 4% from the company's all-time record in 1957 of \$245,265,000.

Hercules' 1958 annual report to stockholders showed net income after all charges of \$17,509,000, equal to \$2.04 a share of common stock.

This represents a decline of 5% from 1957 when net income totaled \$18,116,000, equal to \$2.14 a share of common stock. Common dividends were \$1.10 a share, the same as last year.

The report showed that 9% of the company's products were consumed during 1958 by the agricultural chemicals industry.

BOOKLET ON FERTILIZER
COLLEGE STATION, TEXAS—“Fertilizers and Their Use” is the title of a bulletin released by the Texas Agricultural Extension Service here. William F. Bennett, extension soil chemist, is author of the bulletin.



E. J. (Ed) McMillan

STAFF ADDITION—Spencer Chemical Co., Kansas City, has announced the addition of a sales representative for a western territory. The new representative will be E. J. “Ed” McMillan, who will serve an area comprised of Colorado, New Mexico, and West Texas. Mr. McMillan, a graduate of the University of Missouri with a B.S. degree in business administration, has been employed by Spencer in production and administrative positions at the company's Jayhawk Works since 1942.

Grasshopper Alert Sounded in Nebraska

LINCOLN, NEB.—Farmers and ranchers in central and western Nebraska should be on the alert for moderate to severe grasshopper infestations in 1959, a University of Nebraska specialist has warned.

R. E. Roselle, extension entomologist at the university, reported that range infestations are expected in portions of Lincoln, Keith, Arthur, McPherson, Garden, Morrill and Scotts Bluff counties.

“Adult egg laying in the fall of 1958 indicated ranchers in these counties should be alert this year,” Mr. Roselle said. “Spotted infestations of grasshoppers are expected to occur in the Nebraska Sand Hills, especially in southern Cherry County and northern Grant, Hooker and Thomas counties.”

Mr. Roselle said that cropland grasshoppers threaten a larger area of the state including most counties west of a line from Albion to Red Cloud. These areas will not be completely infested, however.

USDA Approves Davison's Dri-Die Insecticide Label

BALTIMORE—The U.S. Department of Agriculture has approved the permanent registration of the W. R. Grace & Co. Davison chemical division Dri-Die Insecticide 67 label, reported the company. Similar authorization has been obtained from state regulation authorities.

Approval was allowed on the control of roaches, drywood termites and animal fleas. The product is a chemically treated, porous silica gel of micron sized particles.

Following USDA approval, the company announced a nationwide distribution of Dri-Die through pest control chemical distributors.

SEED SHIPPED

PORTLAND, ORE.—A 2½-ton “sample” of Oregon grass and legume seed was recently shipped to the Far East in an attempt to create new markets for the state's flourishing seed industry. The top-quality seed, donated by Oregon seed growers and dealers, is being shipped to Japan, Korea, Burma and Thailand, where it will be used to establish trial plots and demonstration plantings in those countries.

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JAPANESE BEETLE GRUBS

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2½ lb. pkg.	one-fourth acre	14.00

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Wheat Streak Mosaic Expected to Reduce Yields in Kansas

MANHATTAN, KANSAS—Actual wheat losses cannot be estimated until spring, but, according to a survey, it appears now that wheat streak mosaic will reduce yields in the western two-thirds of Kansas—the important wheat area of the state.

A team of Kansas State College and U.S. Department of Agriculture scientists has just completed a survey of the state that took them into 99 of the 105 counties. They found wheat curl mites that transmit streak mosaic more abundant than any time since 1953-54.

Fifty-six per cent of 241 samples from planted wheat fields and 77% of 81 samples from volunteer wheat fields were infested with the mites. Heavy populations of the mites also were found in barley fields in north central Kansas.

In a partial survey of the state, plants already infested with streak mosaic were found in at least 22 Kansas counties. Mosaic disease symptoms were evident in many fields in the Russell and Lincoln counties area. Cold weather retards development of streak mosaic, but it neither destroys the disease nor the mites that spread it.

The USDA-K-State survey team included botanists, plant pathologists and entomologists. They frequently have warned that leaving volunteer wheat and planting wheat early both favor the mite that spreads streak mosaic. The mites, known scientifically as *Aceria tulipae* (Keifer), are too small to be seen except under magnification of at least 15

American Potash Registers 12% Sales Gain in 1958

LOS ANGELES—American Potash & Chemical Corp. for the year ended Dec. 31, 1958, registered a 12% gain in sales over the previous year, announced Peter Colefax, president.

Sales for 1958 were \$47,920,105 as compared with \$42,837,213 for the previous year.

Net income for the year 1958 was \$4,370,443, equal, after preferred dividends, to \$1.83 per share on the 2,270,877 shares of common stock outstanding at Dec. 31. In 1957, earnings of \$4,706,235 were equal to \$2.35 per share on the 1,908,444 shares then outstanding. Sales and earnings since Jan. 1, 1958, reflect the results for Lindsay Chemical Co., which was merged into the company May 1, 1958.

Mr. Colefax reported that sales of potash, sodium chlorate, ammonium perchlorate and lithium carbonate were ahead of 1957 levels while shipments of soda ash and salt cake were lower. Sales of boron products for industrial uses equalled previous year levels.

Permit Granted to Build Oregon Fertilizer Plant

JEFFERSON, ORE.—The Jefferson city council has issued a building permit to the Meeker Fertilizer Co. of Salem, Ore., for construction of a plant here. The 3,600 sq. ft. storage building will be located southwest of the town's old depot. Separate tanks for liquid fertilizer will be located near the building.

HESSIAN FLY IN KANSAS

MANHATTAN, KANSAS—Hessian fly populations have built up in a few local areas in Kansas and losses could be heavy for susceptible wheat varieties grown in these small areas, a Kansas State University entomologist has warned. Although Hessian fly populations remain low or non-existent over much of the state, R. H. Painter said a team of scientists recently found some fields of volunteer or early planted wheat in Rooks and Marion counties where more than 90% of the plants were infested.

Pacific Society Branch Announces Meeting Dates

SACRAMENTO, CAL.—The 43rd annual meeting of the Pacific Branch, Entomological Society of America has been scheduled for June 23-25 at the El Dorado Hotel, Sacramento, according to F. M. Summers, depart-

ment of entomology, University of California, Davis, program chairman.

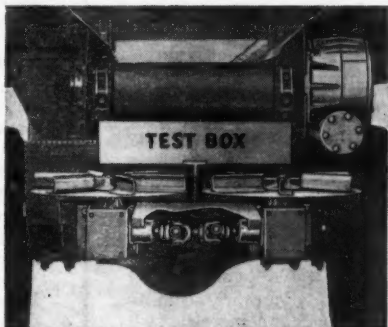
Subjects scheduled for discussion include a symposium on objectives and problems in pesticide residue analysis, mechanical and physical aspects of pesticide application, and biological control.

Invitational papers and addresses

CROPLIFE, March 30, 1959—21

will cover topics including "Responsibilities of Those Who Make Insect Control Recommendations"; "Progress Toward Eradication of Pink Bollworm from Arizona"; and "Support and Direction of Research by Industry."

In addition, numerous submitted papers are scheduled.



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The New Leader L-22S with 7.0 h.p. engine available for lighter applications.



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Croplife

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Midwestern states.

Industry Resists Proposed Fertilizer Law

MEMBERS OF THE antitrust and monopoly subcommittee of the Senate Committee on the Judiciary were presented some potent arguments recently when that group met in Washington to consider changes in the Robinson-Patman Act in accordance with S.11, the bill sponsored by Sen. Estes Kefauver (D., Tenn.) and Rep. Wright Patman (D., Texas).

Attorneys representing the fertilizer and pesticide industries told the subcommittee that despite apparent fears of the authors of S.11, there are no predatory competitive practices in the fertilizer industry, permitted by the "right to meet competition" proviso. "To the contrary, this right to meet competition is essential to the fertilizer manufacturer's ability to compete in the largest geographical area within which he can market and make a profit," Robert L. Ackerly, counsel for the National Plant Food Institute, told the lawmakers. "S.11 could result in carving the country up into small geographic monopolies and drastically reduce competition," he declared.

The attorney pointed out that the farmer has been the primary beneficiary of the present vigorous competition in the sale of fertilizer. "The price of fertilizer has advanced less over the years than the prices of any other commodity he buys . . . Accordingly, the conclusion is inescapable that there are no practices in the distribution of fertilizer which warrant the passage of this bill. To the contrary, S.11 will likely have an adverse effect on the American farmer."

The second point of objection to S.11 lies in its jeopardizing some of the sound, well-established marketing practices in the sale of fertilizer. "Before arriving at this conclusion, we attempted to appraise the probable effect of this legislation upon present practices. While the most honest answer which we can give is to say that it is impossible for anyone to foresee with any preciseness or assurance the total effect of the proposed legislation, it is reasonably clear that the ability to compete would be substantially lessened."

This would be true for a number of reasons, the attorney went on. In the first place, fertilizer manufacturers must meet a competitor's lower price or lose the business. Under present law, competition can be met. But could it be met under the conditions set up by S.11?

The fuzziness of the wording of the law would make it nearly impossible for a fertilizer firm to know whether its lowering of a price might lessen competition and tend to create a monopoly. This uncertainty of whether or not in meeting a competitor's price he might become involved in long expensive litigation would result in protected pricing which the attorney called "the antithesis of our competitive system."

"Small business particularly relies more heavily on the right to meet a competitor's lower price than does the larger business organization. Consider a large supplier who can supply a customer in quantity and thus show a cost justification for a lower price than the going or market price in that particular area. A small supplier who would like to compete for some share of this business could not show cost justification to meet the large supplier's lower price nor could he lower the price to that level for all of his customers without reducing profit margins below a reasonable minimum.

"If the small supplier can secure a share of that business on the basis of an equally low price, his increased volume may lower his unit cost and justify some general decrease in prices. If he can-

not secure this volume, the prices to the rest of his customers undoubtedly will stay the same."

The attorney told the subcommittee that large purchasers normally like to buy from more than one source so they will not be dependent upon single supplier and lose that source of supply in the event of production or other difficulties. But if a small supplier cannot compete on a situation-to-situation basis for a share of the business of the large suppliers, then the buyer will have no choice but to deal with the one supplier who can deliver at the lowest price.

"And if the effect of a lower price to meet a competitor's equally low price 'may be' to substantially lessen competition or tend to create a monopoly, the small supplier is running the risk of violating the law."

Actually, as the lawyer pointed out, if there is an area in which the small supplier can meet an equally low price without the risk of running afoul of the provisions of the proposed law, "that area is too obscure and fleeting to be of any benefit to a fertilizer salesman in the field."

We feel that most of the business community involved in the marketing and sale of fertilizers will agree with the attorney that Congress should not impose such a vague standard of lawfulness or unlawfulness as a guide for daily decisions. Operating under the cover of such a law would be not only confusing, but would bring exactly opposite results from those its authors seem to anticipate. Instead of increasing competition, it would tend to stifle it.

We still wonder about why the fertilizer industry is so frequently picked as a sort of "whipping boy" for legislators with grandiose ideas for reforms. As we look around on the general national and world scenes, we can see a number of situations not connected with the agricultural chemical industry, which warrant considerably more attention on the part of legislative brains.

Ski Resort Owner Puts Fertilizer on Skids

AN OFFBEAT use of ammonium nitrate in a seemingly un-agricultural manner has been reported from Ste. Marguerite, Que. The fertilizer, according to reports, has been employed by operators of Laurentian resorts to harden sun-softened snow on ski slopes. The operation, they say, prolongs the spring skiing season for as much as two or three weeks.

Skiers at Chalet Cochand witnessed a strange sight recently upon observing a caterpillar-treaded vehicle loaded with ammonium nitrate crawling slowly up a slope behind the lodge. Two men at the rear of the machine were spreading the fertilizer granules on the soft snow.

Shortly thereafter, the fertilized snow was reported to have become hard and firm and so fast that some of the more timid skiers decided to try a slower hill.

G. R. Snyder, technical service manager of the agricultural chemicals division of Canadian Industries, Ltd., supplier of the fertilizer, explains that when the fertilizer is spread on soft snow, it absorbs the moisture and in about 15 minutes forms a hard, granular surface which provides good skiing conditions.

Mr. Snyder adds that the addition of fertilizer to the ski slope not only aids the immediate situation, but when the snow finally melts, the nutrient remains to strengthen grass growth and provide a better surface to hold next year's snow.



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what's your * E.Q.?

QUESTIONS

- | | True | False |
|---|--------------------------|--------------------------|
| 1. Inorganic salts are frequently added to oil-water systems to break emulsions. | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. It is impossible to prepare practical emulsions in which the aqueous phase contains high concentrations of inorganic salts. | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Good agricultural emulsifiers may be characterized as individual specific chemical compounds. | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. The anionic components of an agricultural emulsifier impart improved performance in soft water. | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. A good emulsifier can be fully characterized by the ratio of anionic to nonionic components. | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. The active ingredient content of an emulsifier is the chief criterion of its efficiency. | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Variations in toxicant, solvent and waters require adjustments in emulsifier blend for optimum performance. | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. The ratio of the emulsifiers in a matched pair need not be altered when the concentrate is used at high or low dilution rates. | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. In general, it is safer to formulate slightly higher on the nonionic side than on the anionic side when employing matched pairs. | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Most formulators use the correct amount of emulsifier in their emulsifiable concentrates. | <input type="checkbox"/> | <input type="checkbox"/> |

*Emulsifier Quality

ANSWERS

- True. Most emulsifiers "salt out" in the presence of inorganic salts which impair their function and breaks the emulsion.
- False. Emulsols H-A, H-B and H-C are used to emulsify insecticides in concentrated mixed fertilizer solutions in which the salt concentration may approach saturation. These emulsifiers have a unique tolerance to high salt concentrations.
- False. Most efficient agricultural emulsifiers are blends of several anionic and nonionic surfactants.
- True. If properly balanced with non-ionic components. Conversely, the nonionic components of such an emulsifier impart improved performance in hard water.
- False. It is not sufficient to balance the anionic-nonionic ratio. Since both anionic and nonionic components have hydrophilic and lipophilic properties, each in turn must be properly balanced to obtain maximum efficiency at the minimum use level. This requires blending several components, in some cases as many as 12 different surfactants.
- False. The composition of the separate components and their balance is the prime consideration.
- True. This is achieved most conveniently by the use of matched pairs of emulsifiers.
- False. The rate of dilution required by the particular field application affects the blend of the matched pair necessary for optimum performance.
- True. An excess of nonionic may result in excessive creaming which can easily be redispersed, but an excess of anionic may result in a tendency toward oil separation.
- Only you can answer this. If you are using Emulsols, you are saving money because they can be used at low use levels and give outstanding aging stability. Low moisture content, the rigidly controlled components, and Emcol know-how allow you to manufacture superior concentrates at competitive prices.

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SCORING: If most of your answers were correct, you definitely have emulsifier "know-how." And most formulators with "know-how" look to Witco's Emulsol Products for leadership in the field of emulsifiers for the pesticide industry. This leadership is based on continued research into new problems which arise such as liquid-pesticide, liquid fertilizer formulations...on rigid control of production by an outstanding staff of chemists...on technical service to help you with your particular problems.

Send for Witco's Manual on "Pesticide Formulation" describing the Emulsol Emulsifiers for the agricultural industry.



